



Socio-economic conditions of the fishing community of Rezu khal in Ukhiya, Cox's bazar

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General Note



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ABSTRACT

The present research work was conducted to assess the socio-economic conditions of the fishing community of Rezu khal, Ukhia. A structured questionnaire survey was done on 60 fishermen. Education status showed that, only 4.7% of the fishers having secondary education while 48.2% of them having no formal education at all. There was a prevalent relationship of contentment of fishermen, children's school, taking risk at work with the fishing income that was analyzed by One Way ANOVA (SPSS v.22) at $p < 0.05$. In the present survey, almost all the members of the community were found to be involved in fishing activities year round. Housing condition showed that around 52% of the houses were semi pacca. Regarding (70%) people use tube-wells for drinking water and (71.4%) for sanitation system. 19% of the respondents were found to have no sanitary latrine. Their monthly income ranged between TK. 3000 to TK. 6000 (45.5%). For credit source, (28.6%-57.1%) of respondent fishers were found to be dependent on dadondar. Principal Component Analysis (PCA) was done to isolate variables that may be sufficient for socio-economic study and Correlation matrix was done to find out the relation among variables.

Keywords: Socio-economic, Conditions, Fishing community, Rezu khal, ANOVA

1. INTRODUCTION

Bangladesh is a vast delta bounded by the Bay of Bengal on its southern limit. River, their tributaries and distributaries flow through the country constituting a water way of the total area about 22,155 km (Rahman et al. 2015). The water channels are offering immense scope and potentiality for augmenting fish production and socio-economic security of the people living around. The Exclusive Economic Zone (EEZ) of Bangladesh encompasses an area of 76,800 km² in the Bay of Bengal, which forms an important potential source of fin fish and shellfish (Shafi and Quddus 1982). This sector provides 1.78 million people's full-time and part-time employment facilities (Azad 2015). It plays a crucial role in the national economy of Bangladesh through employment generation, poverty alleviation, supply of animal protein and foreign exchange earnings (Alam 2005). This sector also contributes about 60% of the national animal protein in-take and 19% percent of the total protein in-take in the average Bangladeshi diet (DoF 2014). For subsistence level fishermen and their families, the fish they catch is often their only source of protein and essential minerals (Rahman et al. 2015). Local fishing communities in the coastal areas of Bangladesh are mostly dependent on fisheries and coastal resources. The term fishing 'community' is extensively used in fisheries policy (Clay and Olson 2008; Ross 2003). About 11 million people indirectly earn their livelihood out of activities related to fisheries (FAO 1995). Fishermen communities are one of the most vulnerable ones in Bangladesh. They are underprivileged by any standard. Over the years monetary conditions of the fishermen has further deteriorated. Institutional and financial access is restricted as a poor fisher folk require large loans (i.e. for purchase of boats and fishing gears) and considered as a high risk by lending institution, Government, Banks and NGOs. Consequently, they are more likely to rest on informal lender (i.e. Dadonder system). The fishermen live in relatively small and isolated communities. The fish folks are mostly landless and have no other reliable source of income. They have the opportunity of income only in the fishing seasons. They are frequently exploited by the distributor's employers of marketing channel (Alamgir 1993). Methodologies towards development process may vary from one country to another (Rabby et al. 2011). A country which lacks natural resources is in a disadvantaged position in the running competition of development compared to other counterparts which have been enjoying the benefit of natural resources (Nargis and Hossain 2006; Scoones 1998). Nevertheless, evidence states that over dependency on natural resources makes a nation lackluster which can be a greater burden for development. None can deny the need of competent manpower for the developmental process (Alam et al. 2009). Alam et al. (2012) stated that, country with natural resources should use this as an extra support to open and operate other sectors that can withstand even after a sudden collapse of the naturally established sector or a sector reinforced by the nature (Alam et al. 2012).

The Rezu khal is believed to be one of the most important rivers for the fishing industry because of its once abundant supply of Brackish water fish. The inhabitants of the region of Rezu fishermen are mostly Local area people. A group of fishermen belonging to live in the surrounding area of the Rezu khal. From practical observation it was found that they earn their subsistence by catching fish and collecting common fish and fry from the Rezu khal. The fishermen of this community are socially, economically and educationally underprivileged and lack their own financial resources. Moreover, this caste system limits the occupational mobility and employment opportunities, as does a lack of education and access to basic information. Therefore, this research work was done/ carried out to find out the present socio-economic condition of the fishing community of Rezu khal.

2. MATERIALS AND METHODS

2.1. Study area

The present study was carried out in North Sonapara, South Sonapara and west Sonapara (under Ukhiya upazila) Cox's Bazar district. The survey was conducted from the April 2014 to August 2015. Rezu khal flows into the Ghatghorpara, Jahellapara, Monglapara, and Goaliapara. The sampling station is shown in Figure 1.

2.2. Data collection

Data was collected using surveys, focus groups, PRA (Participatory Rapid Appraisal), RRA (Rapid Rural Appraisal), key informant interviews and direct observations. Questionnaire survey was done for this study and interviewees were selected randomly (Henry 1990). The survey design was based on expert advice from local NGO staff and guidelines for collecting baseline fisheries data (Kronen et al. 2007). To get income and demographic data we used the design drew on regional guidelines (Malleret-King et al. 2006) and validity recommendations (Fink 2003). To get a homogenous group 'Majhi' (team leader) and 'Engine operator' of the boats were excluded purposely and only the fishing labors were interviewed for this study.

2.3. Data analysis

One Way Analysis of Variance (ANOVA) was done to show the relationship among the variable. According to Dreher (2003), Principal Component Analysis (PCA) was performed on the original data set (without any weighting or standardization). Pearson's product

moment correlation matrix was done to identify the relation among variables to make the result strong obtained from multivariate analysis.

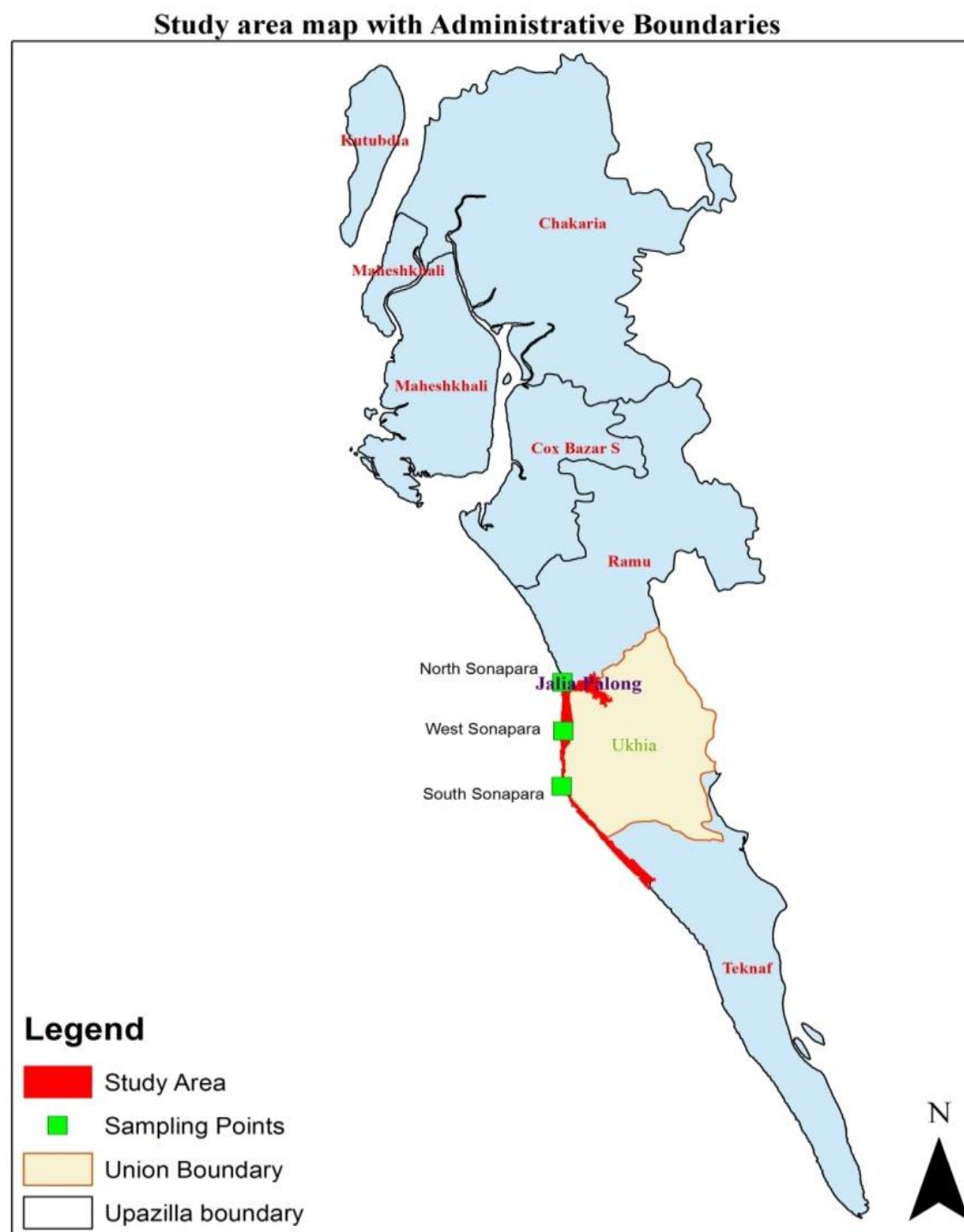


Figure 1 Map showing the sampling stations of Ukhiya Upazilla

3. RESULTS AND DISCUSSION

In the present study, assets or resources were assessed under five categories namely physical, financial, human, and natural.

3.1. Human capital

In the surveyed area, it was found that most of the fishermen belong to Muslim religion (90% at South Sonapara area and 95% at West

Sonapara). Kabir (2012) documented 82% Hindus and the rest 18% Muslims at fishermen community of Old Brahmaputra River. Most of respondent said they are affected by caste system. Caste deters outsiders from entering into the same profession (Oudwater 2001) and limits people's opportunity to seek substitute employment strategies outside of their old-fashioned occupation (Blowfield & Haque 1995).

The knowledge about age structure of fishermen was important in estimating potential creative human resources. The fishermen in the present study were mostly of middle age (42.4%) and matured aged (17.6%) who could afford much energy and labor in catching fish. This agrees with the fishermen of the age structure reported by Alam (2004) and Hossain (2007). Majority of them prefer joint family (61.9% were of joint family at South Sonapara, 47.6% at North Sonapara and 66.7% at West Sonapara). Kabir (2012) stated that 88% fishermen live in joint families and 12% in single families. Dasgupta (2004) and Hossain (2007) also showed similar kind of family at Gazipur and Mymensingh district.

In the current study areas, 25 % fishermen's family size were 5-6, 35 % were 7-8, 10 % were 9-10, but the national house hold size were 4.7 (BBS 2006). The fishermen household sizes were greater than national household size. Khair (2005) and Kabir (2007) reported that 60% of fishermen family size was 5-7, 25% less than 5 and 8% above 8. Normally, a family size of the fishermen of Bangladesh is high because of high birth rate and poor family planning (Kabir 2012). Moreover, the size and composition of family are largely related to occupation, income and education (Islam 1994). Bhuiyan (2009) recorded the average number of children (5) for fishermen of Chittagong coast. 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 and Armstrong 1997).

The official schooling helps in the attainment 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. There was a strong relationship between society and education. Human resource development was development was largely a function of education. The level of education of the surveyed villages fishermen educated reveals that 29.2% were had no formal education, 25.0% were sign only, 21.2% were primary educated, and 20.8% were secondary educated. The results of the present study agree with the result of Alam (2004).

The numbers of members are normally high in all the family and they tend to get early marriage of their children. At the time of marriage they gave dowry for their daughter happiness and the dowry system was found high at North Sonapara (90.5%). But for this curse system of the society most of the families are being affected. After marriage, major percentage of family did not take family planning as it was observed high at South Sonapara (73.7%) and West Sonapara (73.7%).

3.2. Natural capital

The natural capital of the fishermen characterizes the resources such as land, water, timber, wildlife, biodiversity, environmental resources (Kabir et al. 2012). These resources are essential for fishermen and related groups to support yield (Ali et al. 2009). Unplanned and rapid growth of population affected fishermen income that hugely responsible for capital depletion.

Land is one of the most important physical assets which can be used either for production purpose or as collateral for loan. In the present study, majority of the respondents 79% were found without any agricultural land. According to Kabir (2012), 88% fishermen were found landless while 6.5% possess own land which is almost similar to the result of the present study. On the other hand, Alamgir (1993) stated that 92% households were found to possess agricultural land in the coastal belt of Satkhira. In general, ownership of agricultural land is limited among the fishing community of rural area.

Ponds can be used for various economic activity and provide a good source income. In the present study, majority of the respondents (95.0%) were found not possessing any pond while 5.0% were found with ponds.

Gold or such valuables are treated as saving which people can use either as collateral or sell to secure livelihood during crisis period.

3.3 Physical Capital

In the study area house of fishermen were of five types, i) Mud made: these houses are made of mud using some splits of wood, 15.8% of people use these type of material to make their houses, ii) corrugated iron and straw: the walls of these house made of straw and its roof is of corrugated iron, 21.1% people make this type of house, iii) Bamboo fence: 5.3% people use this type of house, iv) Semi pacca: these houses are brick built and corrugated iron or bamboo are made in its roof, 52.6% people can make this type of house because, the price is so high to build a semi-pacca building. The similar scenarios concerning housing condition were also stated by Alam (2004) and Hossain (2007) in Potuakhali district. Hossain (2004) reported that 50% of the fishermen households were made of straw and bamboo materials at North Kattoli. So, it can be mentioned that the housing condition of the respondents

is similar to that of other fishing community of our country.

Health facilities enjoyed the fishermen community were very poor and unsatisfactory. Fishermen are mostly dependent on local quack or village doctor who has no knowledge about modern medical science. Some time they come to "Kobiraj". The tendency of the fishermen to obtain inappropriate poor medical service from the village doctor appeared to be due to financial inability of the fishermen to bear the medical expenses. 60% fishermen were out of satisfactory health facilities. Availability of health facilities to the fishermen community in the present study was more or less similar to those found elsewhere (Alam 2004 and Hossain 2007).

Most of the fishermen use sanitary latrine (85.7% at North Sonapara, 80.9% at West Sonapara and 76.2% at South Sonapara) instead of hand built house on lease land. Hossain (2004) reported that 81% households were found to have sanitary latrine and 2% kacha latrine at North Kattoli fishermen community which is not in agreement with the result of the present study. However, it can be said that proper initiatives are required to improve the health and sanitation condition of the fishers. Because of their profession nature and living condition they have to experience with some diseases (diarrhea, dysentery, cold fever and other type of diseases).

3.4. Financial Capital

Most of the fishermen living adjacent to Rezu khaltake fishing as their solely bread earning occupation. The highest amount of fishermen found at North Sonapara (65.9 %) who have evolved fishing as their principal profession. With the inception of downpour, fishing activities were increased due to availability of increased number of fish. Participation of increased number of fishermen in the monsoon period coincides well with the findings of Alam (2004) and Hossain (2007). Besides fishing, they work as net maker, daily labor, dadondars and rickshaw/van puller during non-fishing season.

Table 1 Occupational status of the fishermen in the study area

Fishing village	Main occupation	% of total	Secondary occupation	% of total
South Sonapara	Fishing	52.2	Daily labor	15.0
	Fish trading	21.7	Dadondars	10.0
	Fry collector	17.3	Small business	15.0
	Agriculture	13.0	Rickshaw/ van puller	25.0
	Other	8.6	Net making	30.0
North Sonapara	fishing	65.2	Daily labor	45.0
	Fish trading	39.1	Dadondars	20.0
	Fry collector	21.7	Small business	15.0
	Agriculture	4.3	Rickshaw/ van puller	10.0
	Other	0.0	Net making	10.0
West Sonapara	Fishing	39.1	Daily labor	20.0
	Fish trading	21.7	Dadondars	30.0
	Fry collector	13.0	Small business	20.0
	Agriculture	4.3	Rickshaw/ van puller	10.0
	Other	4.3	Net making	10.0

It was investigated from the study area that most of the fishermen possessed own household land and almost 80% in all examined area. The results showed that more than 33.3% of the respondents were not having any boat for fishing while small proportion of them 42.9% were found with engine boat and 28.6% were boat without engine. Kabir (2007) and Khair (2005) reported that 60% fishermen were found with small non-mechanized boats. The survey revealed that 52.6% of the respondents had no nets while 31.8% had fishing nets while the number of net is not more than one. In the study area, government has banned fishing during breeding season and use of fine mesh net is prohibited which may has led to reducing the fishing activity. Kabir (2012) reported that more than 60% fishermen had no fishing crafts and 56% had no fishing gears in the Old Brahmaputra River. According to Kabir (2007) and Khair (2005), 60% fishermen had their own fishing gear which agreed with the present study. Generally, poor fisher folk work as hired labor and ownership of net is often beyond their financial ability.

The income profile is strong economic indicator of national development. The main occupation of the fishermen is fishing or related activities. The average yearly income of fishermen was found to be 48500 TK. This level of annual income coincidence with

average national income (US\$ 456) in Bangladesh (as documented in Bangladesh economic Review 2006). Hossain (2007) indicated that fishermen in Kaliakoir upazilla under Gazipur district had an annual income ranging from TK. 24000 to TK. 40000. On the contrary, Alam (2004) found a much higher income in case of fishermen in Nuf estuary in Teknaf district. Income also fluctuates with their catching capability, number of crafts and fish production in the fishing area. Moreover, depends on climate condition, market condition, and health condition.

As income of fishermen was not satisfactory so most of them have no saving scheme at North Sonapara (70.0%), at South Sonapara (55.0%) and 50.0% at West Sonapara. Saving in different forms help to cope with crisis and reduce vulnerabilities in the livelihood of peripheral poor. The survey revealed that majority (60.0%) of the fishermen were found without any sort of savings. This result is similar to that of Kabir (2012) and Khair (2005). They have no life insurance even though life insurance is a means of risk reduction. This may be because either lack of interest or not having enough money for buying a policy. This result is in agreement with that of Bhuiyan (2009).

The survey results showed that most of the fishermen have no sources of remittance. For credit source, (28.6%-57.1%) of respondent fishers were found to be dependent on dadondar and during the period of financial crisis most of them take loan (Figure 2). Khair (2005) reported that 40% fishermen households take loan from Dadondar which agrees with the present result. 38.8% responded that, they are able to feed the family year round.

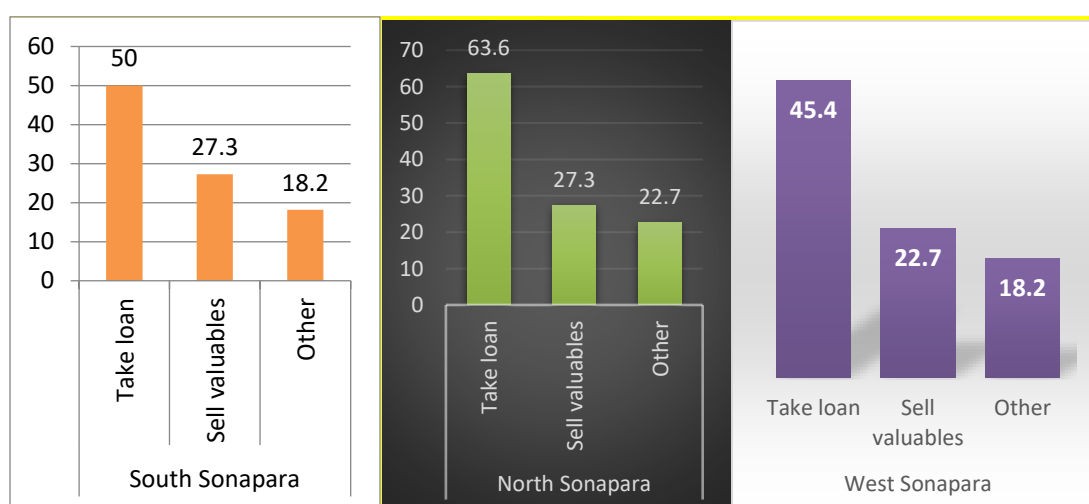


Figure 2 Strategies to cope with financial crisis of the fishermen in the investigated villages nearby Rezu khal

According to Kabir (2009), 88% fishermen were found to be landless while 6.5% possess own land which is almost similar to the result of the present study. On the contrary, Alamgir (1993) stated that 92% households were found to possess agricultural land in the coastal belt of Satkhira. In general, ownership of agricultural land is limited among the fishing community of rural area.

3.5. Correlation Matrix

In livelihood assessment, the inter relationship among variables provide insight about the relationship among variables. The result of correlations between variables acquiesced with the results obtained by PCA and CA that confirm some new relations among parameters. There was significant positive correlation between Length of service vs Age of the respondent (0.907), moderate positive correlation between Children going to school vs Sole earning member of the family (0.514), Receiving compensation from boat owner vs Having House hold pond (.389) and weak correlation exist between Type of garden produces vs Having livestock (0.351), Receive advance money vs Sole earning member of the family (0.395), Satisfaction with present financial benefits vs Satisfaction level in present socio-economic condition (.376), Receive compensation from boat owner vs Knowledge of life insurance (0.355). On the other hand, moderate negative correlations were found between Children going to school vs. Sole earning member of the family (-0.609), Number of children (-0.673), Sole earning member of the family vs. Length of service (-0.615), Number of children vs Sole earning member of the family vs. Age of the respondent (-0.585), Children going to school vs. Length of service (-0.368).

3.6. Principal Component Analysis

The extraction method was used to find out the principal components in PCA analysis that was Eigen values. The components were taken as principal components whose Eigen values was greater than 0.6 were taken into account. 12 PCs were extracted by using

correlation matrix. Sole earning member of the family and Children going to school are belong to PC1. PC2 was declining of catch year to year, and PC3 was having livestock. Legal help from police/coast guard (PC4), source of weather forecast at deep sea (PC5), coping mechanism for declining fish catch (PC6), having saving schemes (PC7), life insurance can reduce risk (PC8), satisfaction with present financial benefits (PC9), common coping strategies for financial difficulties (PC10), life insurance can reduce risk (11), having gold jewelry (12).

4. CONCLUSIONS AND RECOMMENDATION

The study was conducted to assess the socio-economic condition of fishermen living in three villages named, North Sonapara South Sonapara and West Sonapara nearby Rezu khal located at Cox's Bazar district. The objectives of this study were to determine the existing fishing activities, and to know the socio-economic condition of fishermen in the served area.

The fishermen were found to follow three fishing techniques i.e. netting, trapping and angling. Within these fishing techniques, three types of fishing gears were recorded to be used by the fishermen for fishing. Socio-economic condition of fishermen were studied in terms of occupation, caste, family size, family type, education status, income, housing, main occupation, secondary occupation, women role, category of other skill, drinking water sources etc. In the present study, it was found that the people which are a segment of Muslim religious are the dominant in the fishing villages.

The fishing communities of the study area were found to belong to disadvantaged group. They are the people of lower economic strata. The monthly income per fishermen was comparatively lower from the national per capita income. On the whole life the fishermen are risk and their live have no refreshment. Their social status is very low. From the findings of the study, the following recommendations can be made to improve the socio-economic condition of the fishermen and thereby improve their well fare.

1. Educational institution should be set up in fishing villages to improve their educational status.
2. Government should give loans for them at a low interest rate and create alternative job opportunity in off peak season.
3. Local government, NGOs should play a vital role for improving sanitation system.
4. Government should take proper action to stop further cutting of river bends which is mainly responsible for erosion.
5. Government khas land should be allocated to rehabilitate the fishers who have lost their homes and assets by river erosion.
6. Increase of public awareness through the various publications and publicity for protecting fishery resources should be done.
7. Organization of fishery co-operative society should be done.
8. The fishermen should be encouraged to sell their fish to the market directly without involvement of the intermediaries.

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