UNIVERSITY of GREENWICH | Natural Resources Institute

Report of consultation workshops on "Fish distribution from coastal communities - market and credit access issues" (NRI report no. 2711)

NATURAL RESOURCES INSTITUTE

NRI Report No. 2711
Project A1004

Report of Consultation Workshops on "Fish Distribution from Coastal Communities – Market and Credit Access Issues"

22–23 July 2002, Agrabad Commercial Area, Chittagong
25 July 2002, Mohammadpur, Dhaka
Bangladesh

Ulrich Kleih, Khursid Alam, Ranajit Dastidar, Utpal Dutta, Mohammed Solaiman, Iftekhar Uddin Chowdhury, A.N.M. Nurul Kareem and Ansen Ward

This report is an output from a research project funded by the United Kingdom Department for International Development (DFID) for the benefit of developing countries.
The views expressed here are not necessarily those of DFID.
Post-Harvest Fisheries Research Programme – Project R7969

DFID Department for International Development

Natural Resources Institute

Community Development Centre

University of Chittagong

TABLE OF CONTENTS

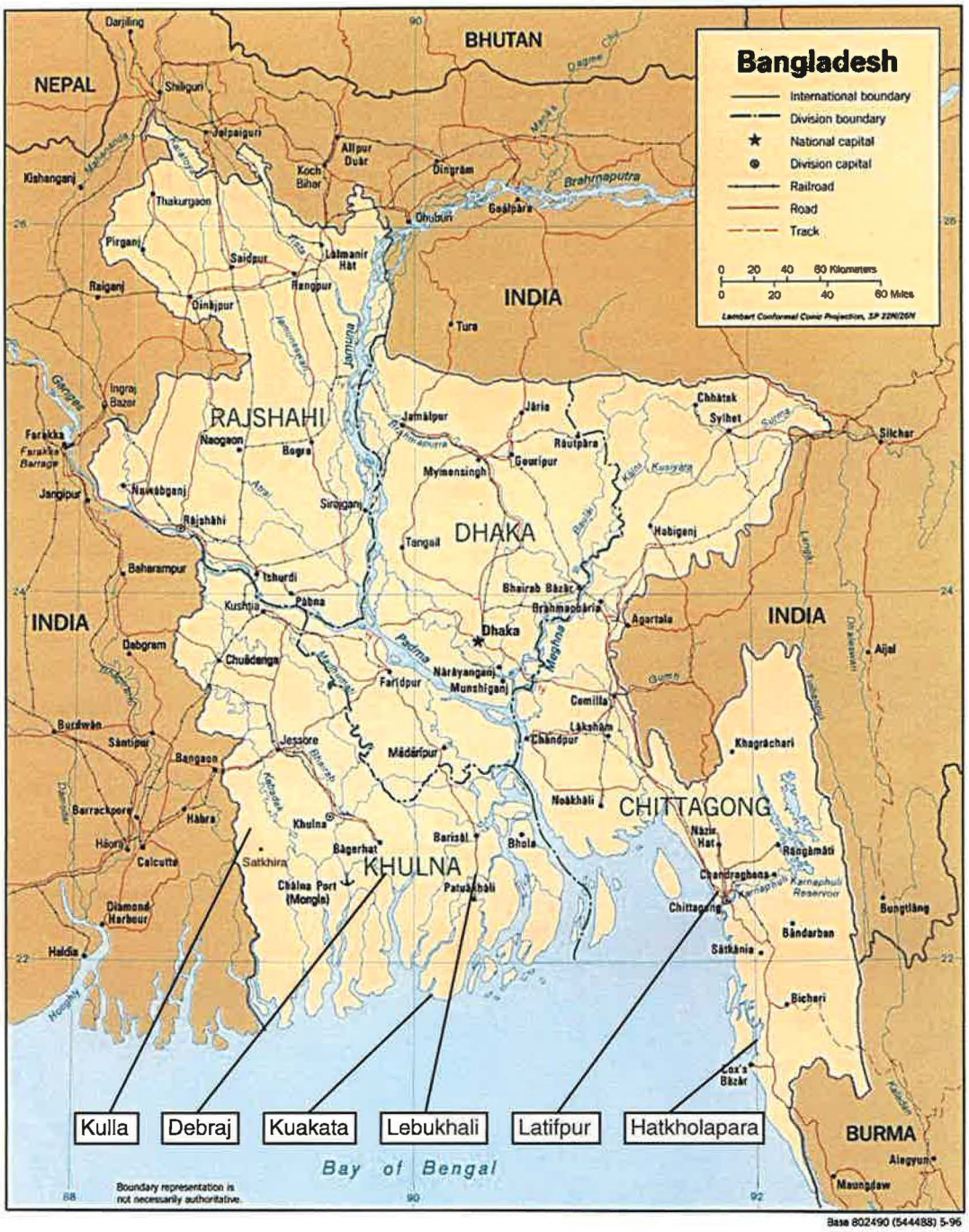
Appendices

Abbreviations

BFDC	Bangladesh Fisheries Development Corporation
CBO	Community Based Organisation
CODEC	Community Development Centre, Chittagong
COFCON	Coastal Fisherfolk Network
DFID	UK Department for International Development
GoB	Government of Bangladesh
MoFL	Ministry of Fisheries and Livestock
DoF	Department of Fisheries
IMM	Integrated Marine Management Ltd.
NGO	Non-Governmental Organisation
NRI	Natural Resources Institute, University of Greenwich, UK
NRIL	Natural Resources International Ltd., UK
PHFRP	DFID Post-Harvest Fisheries Research Programme
SUFER	Support for University Fisheries Education and Research, DFID funded project based in Dhaka
UoC	University of Chittagong
SL	Sustainable Livelihoods

Exchange Rates (July 2002)

1 Pound Sterling = 89.69 Taka
1 US Dollar = 57.32 Taka



Map of Bangladesh and location of villages where the survey took place

Acknowledgements

The authors are grateful to all those who have participated at and contributed to these workshops. Particular thanks are due to the representatives of the fisherfolk and trading communities, and the NGO sector. We are also indebted to Dr Md Fashiul Alam (Professor of Management, University of Chittagong) for his excellent chairmanship of the workshop in Chittagong.

We would like to thank the officials of the Ministry of Fisheries and Livestock, and the Department of Fisheries of the Government of Bangladesh, for their interest in this research and their contributions to the workshops. In addition, thanks are due to Mr Duncan King of the DFID Fisheries Office in Dhaka, and Mr Chris Maurice of the SUFER project for their support during the course of the research.

Last but not least, we would like to thank the DFID Post-Harvest Fisheries Research Programme for providing the funds for the research carried out by CODEC and NRI, and the DFID SUFER Project for providing the funds for the research undertaken by the University of Chittagong.

Background to the Project

The project "Fish Distribution from Coastal Communities – Market and Credit Access Issues" started in February 2001 with funding from the UK Department for International Development (DFID). The main collaborators include the Natural Resources Institute (NRI, University of Greenwich), the NGO Community Development Centre (CODEC), and the University of Chittagong (UoC) Marketing and Sociology Departments. Activities carried out by NRI and CODEC were funded by the DFID Post-Harvest Fisheries Research Programme, and the activities undertaken by UoC were funded by the DFID Support for University Fisheries Education and Research project.

The objectives of the research included the following:

- Analysis of the marine fish marketing system,
- Analysis of access to credit for poor fishermen and traders,
- Analysis of the institutional, social, cultural and political context in coastal fishing villages,
- Validated methodology integrating market and credit analysis techniques with a livelihoods approach in a post-harvest fisheries context
- Policy recommendations benefiting the poor in coastal fishing communities and the fish distribution chain in Bangladesh.

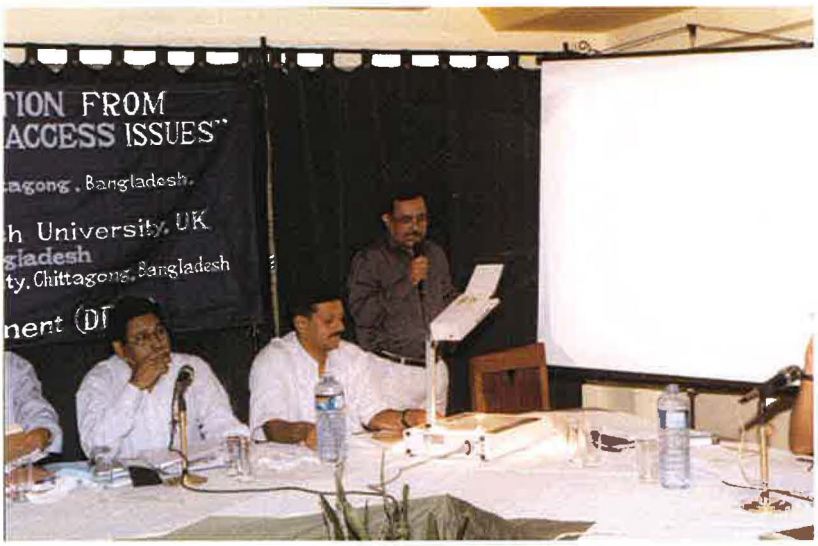
A combination of a livelihoods approach and traditional marketing economics based on sub-sector analysis were used in investigating these topics. CODEC and NRI focused on data collection based on Participatory Rural Appraisal and Rapid Market Assessment, whereas the University of Chittagong undertook quantitative surveys based on questionnaires.

The survey activities took place in July – September 2001, January – February 2002, and April 2002. A stakeholder workshop was organised in March 2001 at the beginning of the project.

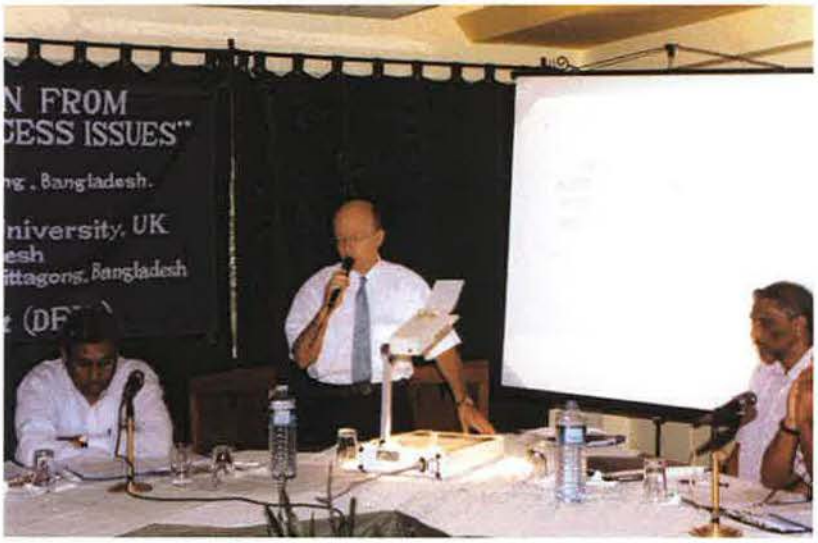
Although some information has also been collected on shrimp, the focus of this study is primarily on marine fin-fish species. This is in view of other studies recently carried out on the shrimp sector in Bangladesh.

The main objectives of the workshop included:

- Presentation and validation of the research findings, and
- Discussion of policy recommendations.



Consultation workshop in Chittagong, 22–23 July 2002



Consultation workshop in Chittagong, 22–23 July 2002

Consultation workshop in Chittagong, 22–23 July 2002

Consultation Workshop on "Fish Distribution from Coastal Communities – Market and Credit Access Issues"

Date : 22nd & 23rd July 2002

Venue: Silver Spoon Conference Hall, Sattar Chamber, 99 Agrabad Commercial Area, Chittagong, Bangladesh

Chittagong Workshop Proceedings, by CODEC and Mr Ansen Ward:

Organised by Community Development Centre (CODEC), Chittagong, Bangladesh, a two-day Consultation Workshop on "**Fish Distribution from Coastal Communities – Market and Credit Access Issues**" was held during 22nd & 23rd July 2002 at the Conference Hall of Silver Spoon, Sattar Chamber, 99 Agrabad Commercial Area, Chittagong, Bangladesh.

The workshop commenced at 10 am on 22nd July 2002 with registration of the participants. The activities of the workshop sessions were formally initiated at 10:20 am with opening remarks by Mr. Ranajit Dastidar of CODEC, who also invited the workshop chairman, Dr. Md. Fashiul Alam (Professor of Management, Chittagong University, Chittagong, Bangladesh), to take over the sessions.

This Consultation Workshop was attended by 35 representatives from different stakeholder groups, such as – fisherfolk representatives from the study villages, Fish merchant (aratdar), journalist, a member NGO of COFCON (Coastal Fisherfolk Network), Professors of Chittagong University and Bangladesh Agricultural University (Dept. of Fisheries Management), representative from SUFER (Support for University Fisheries Education and Research) Project (of DFID, Dhaka), senior staff members of CODEC (Community Development Centre) and the researchers from NRI (Natural Resource Institute, University of Greenwich, UK), IMM Ltd. (University of Exeter, UK), CODEC and Chittagong University (Marketing & Sociology departments). A "List of Participants" and a "Workshop Schedule" are appended in the Workshop Report.

Summary of Day 1: 22nd July 2002

Following the opening of the workshop by chairman **Dr Md Fashiul Alam** and self introductions by the participants, **Dr Khursid Alam**, Executive Director of CODEC, welcomed everyone and explained the origin of the Market and Credit Access research, the project design and the roles played by the six coastal communities involved, CODEC, NRI and the University of Chittagong Marketing and Sociology Departments.

Mr Ranajit Dastidar of CODEC then presented a paper based on PRA (Participatory Rural Appraisal) fieldwork titled – "**How Sustainable are Livelihoods in the Coastal Fishing Communities? – Findings from a Participatory Rural Appraisal**". He began by giving an overview of the Sustainable Livelihoods approach used by the research to understand the complex nature of peoples' livelihoods. He then summarised key types of human, natural, social, physical and financial capital of stakeholders from fishing communities. The lack of education, strong fishing skills, lack of adequate health care and overexploitation of natural resources were described. The Vulnerability Context of the poor such as shocks, trends, seasonality were discussed. The fall of fish catches in Chittagong and other areas highlighted a key negative trend,

which is affecting the livelihoods of the coastal communities. Issues to do with caste, gender, unemployment and the dadandar system were also described along with other problems related to the impact of cyclones, hartals, land erosion and disease. Concluding he described the dilemma of poverty and the link with overexploitation of natural resources; the livelihood strategies, which the coastal poor adopt and the linkages between the strategies of the poor and policy processes. In the ensuing discussions clarifications were given regarding just how sustainable livelihoods of coastal communities are, emphasising the weakening situation of many in these threatened and vulnerable communities.

Key issues related to the marketing of marine fish and credit were described by **Mr Ulrich Kleih** of NRI and the Team Leader of the Research Project, during presentation of his paper: **"Marketing of Marine Fish – Results of Rapid Market Appraisal Exercises"**. He began by highlighting the difference between GoB data on fish supplies and project data based on interviews with traders at various locations in the country. Whereas marine production has seen a gradual increase in volume according to GoB data, project findings show a decline. He went on to highlight the shortfall between overall fish supply and demand and the changes in fish consumption such as the growing importance of low value fish and dried fish to poorer consumers. Attention was also drawn to the large quantities of imported fish now entering the country and the export in high value fish to India. Before providing an overview of the fresh fish distribution chain, Mr Kleih stressed the trend of an increase in real terms of fish prices.

Aspects of the dadandar system were described including the variation in the system in relation to different geographical areas, fishing gears and boat size. A new dadandar system was described – one in which obtaining lower fish prices by the lender was not so important.

He went on to list the main problems faced by different players in the fish distribution sector. Small-scale fishermen's main problems are theft of gear, boats and fish, lack of fish and capital. Paikers' problems are lack of access to easy credit, decline in fish supply, theft of fish at sea, lack of security and infrastructure. Aratadars complain of theft at sea, lack of fish, ice in some areas, and weak market infrastructure. Retailers are seen as some of the poorest people in the chain. They have to come to terms with weak market infrastructure and difficulties for consumers to physically reach some markets.

In conclusion, Mr Kleih stressed the fact that despite these various problems the fresh fish marketing chain is efficient, associated with low losses, and provides livelihoods for many thousands of people. In terms of the supply of informal credit to operators in the chain, there are both positive and negative aspects to this. On the one hand aratdars, over the years, have invested heavily in the sector providing capital that was unlikely to come from other sources. As a result, the sector has developed. On the other hand, the informal nature of credit means that the practice of appropriating very high interest goes unregulated and can lead to problems for those receiving credit (e.g. physical harassment for repayment). Finally, the very important issue of the creation of alternative income generating opportunities for coastal communities was raised. During the discussion, more information was provided on the difference between GoB and project data and the decline in terms of volume of marine fish landings.

Professor A. N. M. Nurul Kareem, Chairman of the Marketing Department of the Chittagong University then described the results of quantitative research into aspects of the fresh fish marketing chain. The research has shown that most mechanised vessels now go fishing for 7 to 10 days and that ice is widely used now at various stages of the distribution chain. Assisting Prof. Kareem, **Mr Sagib Ghose**, Assistant Professor of Marketing, provided an overview of the

proportion of fish moving through various distribution channels. He described the different types of channel and key stakeholders and margins accruing to each. Moneylenders receive the highest margins at 26% and aratdars the lowest at 1.5%. The paper highlighted some of the main problems faced by coastal communities. According to the results of the questionnaire survey, these are lack of access to easy credit, lack of market information, poor security at sea, poor communication, lack of fishing equipments and adequate transport.

Presenting his paper on **"Observations on Aspects of the Marine Post Harvest Fishery Sector of Bangladesh"**, **Mr Ansen Ward** of IMM Ltd summarised observations by the project on aspects of the post-harvest fishery sector focussing on handling, processing and distribution issues. He highlighted the evidence for a reduction in the volume of marine fish landings over time, that fish are now landed at more sites and that the fishermen in some areas are leaving the sector. Whilst ice is now widely used in the sector and is widely available, some traders were still not able to acquire sufficient ice at times when hilsha landings are large. Whilst during other times ice plants are idle or operate on a part time basis, particularly in some landing areas. However, the widespread production and use of ice coupled with improvements in transport and the fact that smaller quantities of fish are now landed and marketed has meant that post-harvest losses are now low. However, if need be, there is still scope to improve handling practices in order to reduce fresh fish spoilage further. He went on to describe the continuing use of insecticides by some dried fish processors and traders.

After briefly introducing the FAO 'Code of Conduct for Responsible Fisheries' and its importance to GoB policy formulation and implementation, Mr Ward went on to describe intervention ideas associated with improvements in handling practices, the use of insecticides and planning initiatives for the development of the post-harvest fishery sector. During the discussion clarifications were given regarding the use of insecticides.

To start the afternoon session **Professor Iftekhar Uddin Chowdhury** of the Sociology Department of the Chittagong University provided an overview of the institutional and socio-political context of the coastal fishing communities. His team's research provides current information on age, household size, education level, occupation, income, land access, migration, credit and some of the related problems faced by coastal communities. The major conclusions of the research findings were that there is an urgent need for the creation of alternative income generating opportunities and that the various services provided to coastal communities need to be significantly strengthened. Other initiatives should be focussed on training and empowerment to enable communities to more ably take part in decision-making and wider social processes.

Credit and gender issues associated with coastal fishing communities were the subjects of the paper of **Dr Mohammed Solaiman**, of the Marketing Department of Chittagong University. After describing the sustainable livelihood approach used, Dr Solaiman went on to describe some of the key findings from questionnaire surveys. Data on male and female education levels, age distribution, loans, savings, banking and women's participation in economic activities were also discussed. Clarifications regarding the data were provided during the ensuing discussion.

Credit was also a central issue of the paper presented by **Dr Khursid Alam**, Executive Director of CODEC. Dr Alam provided an insight into institutional and credit issues from an NGO perspective, drawing on the experiences of CODEC. After highlighting constraints associated with the NGOs' delivery of credit services, he pointed out that still many of the poor in coastal communities do not have access to credit and that a successful formula for micro-credit schemes that met the needs of coastal communities was yet to be discovered. Dr Alam went on to

describe CODEC's '**dadan free loan**' initiative and experiences of other credit schemes. In the subsequent discussion a number of issues were raised, many of which provided examples to support some of the points raised by Dr Alam.

At this stage the participating representatives of the fisherfolk communities of the study villages took part in the discussion.

Comments made by the participating fisherfolk representatives of the Study villages:

Mr. Mohammad Alamgir of Kuakata Panjupara, Patuakhali District: "We are fishers. After availing loan from the dadandars and/or from the NGOs, we mobilise the boats & nets; and then we have to struggle with the sea to earn our livelihoods amidst the high uncertainties in the water and also due to natural calamities. Sometimes we don't get fish in many fishing trips. But, somehow, we can compensate these losses with the catches in the subsequent trips. But, nowadays, piracy is going on unabated in the Bay of Bengal. Very often we are being attacked by the pirates in the Bay and they snatch away our catches, nets and even the boats in some cases. Sometimes we are being physically tortured. After piracy, we are deprived of our principal means of livelihoods. This loss is very difficult to sustain. As a result, we cannot make repayment of loans. Rather, due to piracy, we are forced to become more indebted to the dadandars with further borrowing of capital in exchange of landing of all of our catches to them at 10% commission in every sale. Thus we fall into a debt-trap or into a vicious cycle of indebtedness. So, government should take immediate and effective measures to stop piracy in the waters by deploying the navy or coast guard. We think fish is God-given and we will continue to get those more or less, if piracy is stopped by any means. After 1991, coast guards were stationed in the region and they used to patrol in the Bay and the surrounding rivers for a considerable period; and incidences of piracy were very few at that time. Stoppage of piracy is a big step forward to our livelihood security."

Mr. Shupan Kumar Roy of Kulla, Satkhira District: "We are traditional fishers since several previous generations. Nowadays, our income has gone down to an alarming level. At present, it is very difficult for us to manage square meals for our children and family members and at the same time to continue fishing activities with our meagre income. Our livelihoods get further marginalized due to piracy. There are NGO interventions by BRAC, Grameen Bank, ASA etc. in our village. The loans of the NGOs allow us, to some extent, to remain in fishing activities. But the very acts of piracy drive us to take resort of the moneylenders (*mohajan*), from whom we borrow at an exorbitant rate of interest. We also become unable to pay back loans of the NGOs and others due to piracy and scanty catches. Moreover, the sharp depletion of fish due to wide spread use of monofilament nets (*current jaal* being used for juvenile catches) and very small mesh-sized mosquito nets (for collection of shrimp-seeds) further jeopardise our livelihood options. So, how can we service the loans of NGOs and other moneylenders with the present pace of our ever-decreasing income? Our fisherfolk community has now become unable to continue the fishing profession and we are on the verge of extinction. Now only you, the NGO people, can help us with providing alternative livelihood opportunities and appropriate loans to this end."

Mr. Abdur Rahman Akhand of Lebukhali, Patuakhali District: "Until and unless the illegal fishing with monofilament net (*current jaal*) and mosquito net is being stopped, no development of the fisherfolk community will be achieved despite loan activities of the NGOs. Because of current net the juvenile fishes are being rampantly caught in the river. The uses of mosquito nets for shrimp-seed collection destroy many other fish fries. These are the main causes of fish depletion for the last few years. But the poor fishers are compelled to do so due to absence of appropriate alternative livelihood opportunities. The police also take bribe from the destructive net users. The

catch of juvenile hilsha (known as *jatka*) is one of the principal reasons for hilsha decline. This year price of hilsha has even gone up to Tk 400 – Tk 500 per piece in our locality, which is quite unprecedented. Every year I used to feed my children at least 100 pieces of hilsha. This year I could not manage even a piece (of hilsha) for them. During the recent years the income of the fisherfolk community has gone down to a great extent. I'm a petty aratdar at the Lebukhali fish landing site-cum-market, which is very near to the ferry terminal on the side of the Patuakhali-Barisal road. Last year I could earn Tk 100,000 after meeting all costs including food. But this year, I'm already indebted with an amount of Tk 50,000. The fishermen are now compelled to sell their boats and nets at a nominal price. A boat worth Tk 100,000 is now being sold at Tk 10,000. Some fishermen are being involved in cargo transportation and ferry service with their boats. If the current and mosquito net fishing could be stopped effectively, then the Bengalees would again be able to live with 'rice and fish'."

Mr. Sachin Kumar Roy of Kulla, Satkhira District: "I'm a fisherman from Kulla, Ashashuni, Satkhira. Since last few years we are suffering from a huge virus attack in the shrimp *ghers* (ponds). The virus attack in the shrimp ghers has become an epidemic in Satkhira district and its surroundings. We have not yet succeeded in arresting virus contamination. Not only the shrimps, even the white fish in the same ghers is being attacked by virus. We are approaching very bad times ahead of us. What will we do with a loan? We are unable to repay the loans. There is no way to live. Fish fries are being destroyed; as a result fishes are declining day by day, and now it has become difficult for the fisherfolk to survive with their profession. Please show us a way to get rid of this! If fish cultivation in the regular ponds are being started, then fish would be available."

Mr. Monsur Alam of Hatkholapara, Khurushkul, Cox's Bazaar district: "From the days of our forefathers our main profession is fishing and so is the source of income. Many boat-owners of our locality lost their boats (say 2 or 3 out of one's 5 wooden trawlers) during the 1997 cyclone. Even since then, no organisation, either the banks or the NGOs have come forward to extend credit support in our area – Hatkholapara, Khurushkul. Nowadays, many boat owners are unable to operate their boats in the sea due to dearth of required capital and decreasing fishing income. Some have already sold their fishing gear including the boats. There is still no NGO coverage in and around Hatkholapara. If CODEC comes forward with its innovative credit product like "Dadan-free Loan" in our area, then we would be benefited a lot; and, moreover, this endeavour will play an effective role in poverty reduction in our locality."

Mr. Mohammad Zahangir of Debraj, Bagerhat district: "I was involved in dry fish business. We, the small processors and traders, don't need to use chemicals or insecticides during processing of dry fish. We process fish for drying in the peak fortnight of fishing (*jow*); and sell the dry fish in the following lean fortnight (of fishing – *dala*). We process a very low quantity of dry fish due to dearth of capital and scanty amount of fish available. We don't keep/store dry fish for a long time. We would make loss if we would store dry fish for a long period due to our low scale of operation. So, we don't need to use chemicals or insecticides. Those who fish in the Bay of Bengal near Sundarbans and then process/dry huge amount of fish in the big chars, they need to use chemicals or insecticides for storage of the dry fish for a long time, up to mid monsoon, to earn more profit. Small dry fish traders do not use chemicals or insecticides."

Then **Mr Ulrich Kleih** delivered a second presentation, by the end of day 1, on his paper: **"Methodology to Analyse the Distribution System of Fish from Coastal Communities in Bangladesh, Focussing on Market and Credit Access Issues"**. He provided a summary of the various research methods used during the 18-month long research project. He began by

reminding participants of the three project outputs and that one of these was the development of a method that could be used in the future by other researchers to understand market and credit access issues. The research methods used by the project were then described. These were desk studies, workshops, qualitative and quantitative primary data collection including PRA, commodity chain mapping, stakeholder analyses and economic analyses approaches as well as formal questionnaire surveys. Mr Kleih stressed that a key aim of the research was to enable the equitable development of the marketing system.

Closing comments were made by the Chairman at the end of day 1, who highlighted the likely long-term benefits the research will have for Bangladesh.

Summary of Day 2: 23 July 2002

Dr. Md. Fashiul Alam, Chairman of the Workshop sessions, welcomed all the participants in the second day sessions. Mr. Ansen Ward of IMM Ltd. presented the summary of the first day sessions.

After the summary presentation, Group Activities started with distribution of all the participants into four groups, where the participants contributed through their lively discussions over a period of 2 hours. The groups were headed by: Mr. Kamal Sengupta of CODEC (Group-1), Dr. Mohammad Solaiman of Chittagong University (Group-2), Professor A. N. M. Nurul Kareem of Chittagong University (Group-3) and Dr. Khursid Alam of CODEC (Group-4).

Working Group Activity

The aim of the working group activity on day two of the workshop was to assist the development of project Output:

"Policy recommendations which benefit the poor in coastal fishing communities and the fish distribution chain in Bangladesh, developed and disseminated."

In particular, this involved prioritising key issues to be developed as policy recommendations, to examine these from an institutional perspective and understand some of the likely poverty alleviation implications that would arise from implementing the recommendations.

Task

A list of ideas for policy recommendations drafted in April/May 2002 by CODEC and NRI were presented to the four working groups.

The working groups were asked to:

- Add any ideas of their own or modify the ideas presented.
- Choose the three issues, which they feel are the most important and justify their choice.
- Identify the public, private sector, NGO and academic institutions that they see as being

involved in addressing each issue at the local level as well as the macro (higher) level.

- Describe the role each institution should play in addressing each issue.
- What changes within institutions do they think are required in order to address these three issues effectively?
- How might addressing each of the three issues impact negatively on the poorest in coastal communities and the poorest consumers?
- How might addressing each of the three issues impact positively on the poorest in coastal communities and the poorest consumers?
- Prepare a short presentation (20 minutes) of their group's findings.

Working Group Issues

The four working groups were presented with the following list of policy issues and asked to prepare presentations based on the above guidelines:

- Implement improved fisheries management practices to protect marine resources from overexploitation and to ensure their sustainable use for coastal communities.
- Prevent theft of gears, fish, vessels and other goods and harassment of fishermen and transporters at sea.
- Establish alternative income generating activities for the coastal poor.
- Improve the protection of the environment to address the problems of pollution, siltation, erosion and deforestation.
- Implement more appropriate credit programmes and deliver more appropriate financial products for the coastal poor.
- Implement an effective extension system to deliver services tailored to the needs of coastal communities – improving marketing skills, community organisation.
- Provide coastal communities with better access to information on fish markets via radio broadcasts.
- Improve market infrastructure to improve the efficiency of fish selling and the environments in which fish is wholesaled and retailed.
- Continue to improve road infrastructure particularly the major highways and access roads to coastal areas.
- Provide the public and private sectors with adequate and concise information to assist decision-making regarding policy and development objectives and the efficient use of

capital.

- Improve the availability of electricity in coastal and rural areas.

- Raise awareness amongst private sector stakeholders of improved ways in which fresh fish should be handled, processed, distributed and marketed.

- Prevent the use of agricultural insecticides in the dried fish sector.

Group Presentations started after lunch.

Presentation of Group 1

On behalf of Group 1, Mr. Kamal Sengupta, Leader of the group, presented the findings.

The following three issues were identified in order of priority:

1. Depletion of fish and aquatic resources in the sea (Bay of Bengal) and rivers.

   - Rationale: The ecosystem and biological diversity of these open-access resources provide substantial opportunity for livelihood security for the poor people of these coastal villages. But these open-access resources attract large number of poor people as a ***'sink'***, the process of which obviously leads to overexploitation of these resources. This in turn seriously endangers the livelihood security of the coastal poor by perpetuating poverty.

   Institutions:

   - Department of Fisheries (DoF) of the Government of Bangladesh (GoB)
   - Private sector organisations related to fisheries sector
   - Different research organisations
   - Environmentalist organisations

   Recommendations:

   - Arrest overexploitation of fish through destructive gears
   - Arrest shrimp-seed collection
   - Effective establishment of sanctuary for fish breeding
   - Arrest pollution in the sea and rivers

2. Piracy in the sea & rivers, and harassment on the land.

   - Rationale: Piracy in the sea & rivers, and harassment on the land further marginalizes the coastal communities and also the participants in the fish distribution chain.

   Institutions:

- Coast Guard & Navy
- Local Administration and Police
- Home Ministry of the GoB

Recommendation:

- Deployment of Coast Guard and Navy to arrest piracy in the sea & rivers; and effective use of police force & local administration to stop harassment on the land.

3. Marketing of fish by community organisation backed by required financial and institutional support.

➢ Rationale: Lack of required financial & institutional support for the fisherfolk community, which is intermingled with the appropriation of major share of the margin by the intermediaries.

Institutions:

- All the stakeholders related to finance and marketing

Recommendation:

- Establishment of Community-based alternative fish marketing structure and effective institution, which will be backed by adequate financial and institutional support.

Presentation of Group 2

On behalf of Group 2, Dr. Mohammad Solaiman, Leader of the group, presented the findings.

➢ **Three Core Issues:**
- Security from catching to marketing
- Easy access to Institutional Credit
- Development of Social Institutions

➢ **Arguments for selecting these 3 issues**

- Security
  - Natural capital
  - Physical capital
  - Human capital
  - Financial capital

- Credit
  - Lack of own capital
  - Piracy, natural disaster, shocks
  - High interest rate of informal credit
  - Reduce the dependency on dadandar
  - Improvement of livelihoods of fishermen

- Social Institutions
  - Create more bargaining power
  - Education, training for skill development
  - Decision making

➢ **Identification of different Institutions**
- Coast Guard/Navy
- Police
- Local administration
- Local NGOs/Banks
- Local CBOs
- DoF/BFDC
- Home ministry/Finance/other related ministries

➢ **Institutional changes needed**
- Collateral-free loan from financial institutions through CBOs
- Registration of CBOs
- Coordination between coast guard, CBOs and other respective organisations
- Policy formulation for micro-finance institutions (MFI)

➢ **Negative Impact**
- Innocent people may be harassed
- Financial cost may be increased
- Conflicts among different interest groups

➢ **Positive Impact**
- Security improvement
- Increased income
- Employment opportunity
- Increased social status
- Increased human rights
- Environmental control
- Increased fisheries resources
- Sustainable livelihoods

Presentation of Group 3

On behalf of Group 3, Professor A. N. M. Nurul Kareem, Leader of the group, presented the findings.

3 Main Issues	Institution	Role of Institution	Change in Institution	Negative Impact	Positive Impact
1. Qualitative Fisheries Resources Management & Practice	1. GoB departments & concerned ministries	Policy formulation and proper implementation	To take appropriate measures	Nil	Conservation of fisheries resources and livelihood security of the fisherfolk communities
	2. NGOs	Policy Advocacy & Awareness raising	Data collection & training of the staff	Nil	
	3. Research Institutions	Research & publication	Activate the institutions	Nil	
2. Piracy in the sea and river	1. Concerned GoB departments (Police, Navy, coast Guard, Forest Dept.)	To increase accountability of the respective departments	To sensitise and activate the respective departments	Nil	Safety in the fishing grounds and improved livelihoods
	2. NGOs & Research Institutions	Policy Advocacy	Data collection & networking	Nil	
3. Infrastructure Development	Respective GoB ministries	Corruption-free administration and allocation of required financial resources	To take appropriate measures	Nil	Proper Marketing system will be ensured

New Concepts – claimed by Group 3:

1. Involve the coastal women into the income generating activities.
2. Ensure proper delivery of health related services in the coastal areas – take appropriate measures to extend services of the NGOs/GoB agencies.
3. The agriculture-based communities are increasingly being displaced professionally due to widespread proliferation of shrimp-culture; and consequently they are resorting to inefficient exploitation of the fisheries resources. To reduce overexploitation, the

government should take immediate proper step to ensure alternative income generation opportunities for these displaced people.

4. Banning of fish import, and ensure just price and marketing of our fish resources.
5. Government should ensure stoppage of theft fishing by the foreign trawlers into our territorial waters.
6. The NGOs should give preferences to the members of the fisherfolk communities for employment into their organisations.

Addendum by Group 3

- The government should take initiative to ensure 'fish sanctuary' as part of the 'marine fish resources management'.
- Strict implementation of ban on shrimp-seed collection.
- Proper implementation of the public policies with regard to the fisherfolk communities.

Presentation of Group 4

On behalf of Group 4, Mr. S. M. Giasuddin presented the findings of the group.

Major Issues Identified:

1. Clear-cut government policy for poverty alleviation of the Coastal Communities
   - Initiative should be undertaken by the concerned ministry to frame/declare a clear-cut government policy for poverty alleviation of the Coastal Communities.
   - Opinions and suggestions should be taken from various institutions/agencies/community organisations before framing policy.
   - Necessary laws should be framed for effective implementation of the issues incorporated in the government policy.

2. Effective Management of Marine Fish Resources
   - Co-management system may be introduced (comprising representatives of government, CBOs, traders etc.).
   - Ensure safe fish breeding and growth.
   - Catch control (foreign/domestic).
   - Ensuring safety from foreign and domestic shocks (piracy, disaster, damage etc.).
   - Pollution control (waste dumping by foreign ships, marine & industrial waste etc.).
   - Community training for awareness & skill development.
   - Arrangement for improved marketing activities and services.

3. Adequate capital support
   - Special financial institutions for the coastal communities.
   - Arrangement for ensuring uniformity and effective management of existing micro-financing facilities.
   - Various govt. social services (education, health, sanitation, drinking water etc.) should be channelled through CBOs.

During discussions it was also told that a number of intermediaries exist along the commodity chain (from the fisher to the fish consumer), who appropriate a lion share of the fish price. Fishes are declining day by day. In coastal fishing, policies and rules of the Department of Fisheries (DoF)

ought to be followed; but in practice these are not followed at all. Moreover, based on the present situation fishery policies of GoB should be modified/reformulated.

Dr. Khursid Alam of CODEC in his closing speech expressed his sincere thanks to all the participants of different sectors by whose spontaneous participation and contribution the workshop came to a fruitful end. He also thanked the DFID Post-Harvest Fisheries Research Programme for funding the Research Project and expressed gratitude to NRI, UK for selecting CODEC as its partner in it. He thanked the researchers of the Marketing & Sociology Departments of the Chittagong University for their collaboration in the project. He informed the participants that NRI, CODEC and UoC would jointly produce the final report of this project during next October 2002.

Dr. Md. Fashiul Alam in his closing speech expressed his thanks to CODEC to give him the opportunity to preside over the Workshop sessions and also expressed his sincere thanks to all the participants for their active participation and also for their recommendations. He also told that the recommendations are well developed and if measures are taken nationally on the basis of the recommendations then the aim of this project will be achieved.

Before declaration of closure of the two-day Consultation Workshop, **Mr. Ulrich Kleih** of NRI, and the Team Leader of the Research Project, once again expressed his sincere thanks to the DFID Post-Harvest Fisheries Research Programme, CODEC, NRI, UoC Departments of Marketing & Sociology, workshop participants, chairman of the workshop, and above all the participating fisherfolk representatives of the study villages for their valuable contributions to the workshop.

After that the chairman declared closure of the two-day Consultation Workshop at 4:25 pm on 23rd July 2002.

Consultation Workshop on "Fish Distribution from Coastal Communities – Market and Credit Access Issues"

Date : 25th July 2002

Venue: Conference Hall, Bangladesh YWCA Bhaban, 3/23 Iqbal Road, Mohammadpur, Dhaka, Bangladesh

Dhaka Workshop Proceedings, by CODEC:

Following a two-day Consultation Workshop (at Chittagong during 22nd & 23rd July 2002) on **"Fish Distribution from Coastal Communities – Market and Credit Access Issues"**, organised by Community Development Centre (CODEC), another half-day Consultation Workshop on the same subject was held on 25th July 2002 at the Conference Hall of Bangladesh YWCA Bhaban, 3/23 Iqbal Road, Mohammadpur, Dhaka, Bangladesh. This workshop was organised to share the findings of the research project with the Ministry of Fisheries & Livestock (MoFL), Department of Fisheries (DoF), the NGOs and donors stationed in Dhaka, Bangladesh. This took place at the suggestion of the MoFL and DoF following a meeting with CODEC and NRI on 23rd January 2002.

The workshop commenced at 10 am on 25th July 2002 with registration of the participants. The activities of the workshop sessions were, however, formally initiated at 11 am with opening remarks by Mr. Ranajit Dastidar of CODEC, who also invited the Workshop Chairman, Mr. Ansen Ward of IMM Ltd. University of Exeter, UK, to take over the sessions.

This Consultation Workshop was attended by 27 representatives from different stakeholder groups, such as – Ministry of Fisheries & Livestock (MoFL), NGOs [PROSHIKA, BRAC, COFCON (Coastal Fisherfolk Network), UDDIPAN], Grameen Bank, Grameen Uddog, Bangladesh Agricultural University (Dept. of Fisheries Management), ICLARM (International Centre for Living Aquatic Resources Management), DFID-Bangladesh, DANIDA, SUFER (Support for University Fisheries Education and Research) Project (of DFID, Dhaka), CARE, Fisheries Futures (Fisheries Sector Review, Bangladesh) and the researchers from NRI (Natural Resource Institute, University of Greenwich, UK), IMM Ltd. (University of Exeter, UK), CODEC and Chittagong University (Marketing & Sociology departments). To this end, a "List of Participants" is appended in the Workshop Report.

Originally it was planned that all the eight Working Papers would be presented in this workshop by the respective authors, as was done in the Chittagong Workshop. But later on, due to time constraints, the workshop was conducted in accordance with a rescheduled one (both the Workshop Schedules, the original & the rescheduled one, are appended with the Workshop Report).

Summary of the Workshop

Following the opening remarks of the workshop chairman **Mr. Ansen Ward** and self introductions by the participants, **Dr Khursid Alam**, Executive Director of CODEC, welcomed the participants and explained the origin of the Market and Credit Access research, the project

design and the roles played by the six coastal communities involved, CODEC, NRI and the University of Chittagong Marketing and Sociology Departments. After that Dr. Alam also presented, in brief, the **Methodology of the Research Study**. He began with a brief profile of the six study villages and the stages of the study period. He provided a summary of the various research methods used during the 18-month long research project. These were desk studies, workshops, qualitative & quantitative primary data collection including PRA, Rapid Market Appraisals – commodity chain mapping, stakeholder analyses and economic analyses approaches as well as formal questionnaire surveys.

Dr. Iftekhar Uddin Chowdhury, Professor of Sociology Department of the Chittagong University then provided an overview of the institutional and socio-political context of the coastal fishing communities. His team's research provides current information on age, household size, education level, occupation, income, land access, migration, credit and some of the related problems faced by coastal communities.

Dr Mohammed Solaiman, Professor of the Marketing Department of Chittagong University presented the findings on credit and gender issues associated with coastal fishing communities. Dr Solaiman described some of the key findings from questionnaire surveys. Data on male and female education levels, age distribution, loans, savings, banking and women's participation in economic activities were also discussed. He then briefly described the results of quantitative research into aspects of the fresh fish marketing chain and provided an overview of the proportion of fish moving through various distribution channels.

Finally, **Mr Ulrich Kleih** of NRI and the Team Leader of the Research Project presented the "**Summary of Project Findings – Synthesis of Current Situation and Suggestions for Policy Implementation**". In his presentation, Mr. Kleih described the key issues on: 'declining catches of marine fish', 'unsatisfactory law and order situation', 'lack of credit access', 'government related issues', 'environmental degradation in coastal areas', 'lack of alternative income generating activities', 'lack of community organisation', 'lack of infrastructure', 'inadequate post-harvest handling including the supply of ice', 'unexploited potential for dry fish exports', and 'use of pesticides in dry fish processing'. Each of the above issues was followed by synthesis of the current situation and also by presentation of suggestions for policy implementation. Mr. Kleih ended his presentation with his heartfelt thanks to the workshop participants, project collaborators – CODEC, Marketing & Sociology departments of the Chittagong University and NRI, UK and also to the DFID Post-Harvest Fisheries Research Programme.

Discussions by other Participants

After the above presentations, the chairman opened the floor for questions, clarifications, observations, comments and discussions by other participants of the workshop.

At the outset, **Mr. Richard Banks** of Fisheries Futures (Fisheries Sector Review of Bangladesh) made some of his observations on the existing public and private infrastructure of the fish markets. For example, he opined that, alongside the private fish landing stations, GoB (Government of Bangladesh) took some steps through BFDC (Bangladesh Fisheries Development Corporation) to establish more hygienic fish landing stations. He also wanted to know the present state of use of the BFDC fish landing stations.

Addressing the issue of Mr Banks, Mr Ulrich Kleih of NRI opined that state of use of BFDC fish

landing stations varies in different places. In some areas, for example in Cox's Bazaar, the BFDC fish landing stations are being used quite extensively by the fishers, traders and other stakeholders due to their good location, hygienic conditions and other infra-structural facilities; and also due to absence of other good landing stations. However, despite its good landing facilities, hygienic conditions, better physical structures, the BFDC fish landing station of Chittagong city is not being used extensively by the fishers and traders. Only 20% of the catches along the Karnafully (river) coast (from the Bay) are being landed in the BFDC fish landing station of Chittagong, whereas 80% of the catches are regularly being landed at the Fishery Ghat of Chittagong, not too far from BFDC terminal. The main reasons are that the BFDC terminal is not better located in terms of road infrastructure, and BFDC charges a 20% tax on aratdar commissions. Moreover, the Fishery Ghat is a very old fish landing station of the country, which is well known to the traders throughout the country.

In addition, the Chittagong fish market is mainly controlled by the big aratdars of Fishery Ghat, who also provide substantial amountd of dadan (i.e. credit) to the fishing trawlers to land their catches to the Fishery Ghat, and the aratdars also dislike the bureaucracy of BFDC. In this context, Mr. Kleih stressed the importance of involving the major stakeholders when planning new market and landing facilities (e.g, fish traders, fishermen, and coastal NGOs). Then, Mr. Tasharuf Hossain Forhaji of MoFL took the floor and commented that BFDC is now financially deteriorating day by day due to its administrative and management problems.

Mr. Richard Banks also asked about the players involved in the commodity chain of the marine fish market and the state of competition and efficiency in the marketing sector. Mr. Ulrich Kleih again dealt with his question and opined that there are many players involved in the commodity chain and there are fair competitions at the retail level. At the wholesale level, there is quite concentration at the hands of a few aratdars & business houses, and there are also unofficial barriers to entry for new market participants. This situation may reduce competition to a certain degree. At the same time, the big aratdars and big business houses are also coming up with new innovations like ventures into import and export business.

The issues of dadan were also raised by other participants and these were dealt with by the research team members including Mr. Ulrich Kleih. In this context, the issue of interlocked market arrangements between credit and marketing of fish (represented by dadan and arat system) was also raised and discussed.

Mr. Iqbal M. Fattah of Proshika made observations with the issues of access to education, sanitation and safe drinking by the fisherfolk. He also raised the issue of appropriateness of micro-finance for the fishing communities and opined that the repayment schedules should be designed taking into consideration their income stream, seasonality and uncertainty. Then he informed that Proshika is also presently engaged in development of alternative technology for health-friendly fish drying and preservation. Dr. Iftekhar Uddin Chowdhury of Chittagong University, Dr. Khursid Alam of CODEC and Mr. Ansen Ward of IMM Ltd. responded to his queries and observations.

Mr. Mahbubul Hasan of COFCON raised the issues and scope for alternative income generating activities to be adopted for the coastal communities in general and the fisherfolk in particular. Dr. Mohammad Solaiman of Chittagong University responded to his queries with the research findings.

Regarding inappropriateness of the existing micro-finance products for the coastal fishing communities, Mr. Ansen Ward of IMM Ltd. wanted to know what should be the appropriate

micro-finance product for them. Dr. Khursid Alam of CODEC responded with his opinion that due to sharp decline of marine fish resources many of the coastal fishers are migrating to the big cities, like Dhaka, due to the pull factors of those cities. When they come back, they cannot find their places in their old villages due to further push factors. As a result, the new type of financing should be looked at in this backdrop. The government should come up with proper policies to create environment for new investment opportunities and the NGOs should design finance products for productive enterprise. He also informed that CODEC is now working to this end.

Finally, the ways of arresting piracy were raised by Mr. Richard Banks of Fisheries Futures. Responding to his queries, Mr. Ulrich Kleih told that this is a very difficult issue to handle with and the government has to do many things effectively to this end. The Summary of Project Findings proposed some of the suggestions and the project report will also deal with it in more detail. The present state of piracy should also be an important advocacy issue for the NGOs and the civil society. In this respect Mr. Tasharuf Hossain Forhaji of MoFL opined that there is lack of effective inter-ministerial coordination to this end and there is also a dearth of logistic and human resources. At one point of discussion Mr. Forhaji also told that there are many good public policies; but there are always found to be serious bottlenecks in the different stages of implementation of the policies.

Mr. Ansen Ward, chairman of the workshop, in his closing remarks expressed his sincere thanks to all the participants for their active participation and contributions. He also thanked the project collaborators – CODEC, Marketing & Sociology departments of the Chittagong University and NRI, UK for their effective collaboration in the research project. Then the chairman declared closure of the half-day Consultation Workshop at 1:35 pm on 25th July 2002.

Consultation workshop in Dhaka, 25 July 2002

Consultation workshop in Dhaka, 25 July 2002

Consultation Workshop on "Fish Distribution from Coastal Communities – Market and Credit Access Issues"
Dhaka, 25 July 2002

Summary of Project Findings

Synthesis of Current Situation and Suggestions for Policy Implementation

Project Collaborators:
Natural Resources Institute, University of Greenwich, UK
Community Development Centre (CODEC), Chittagong
University of Chittagong Marketing and Sociology Departments

Project Funding:
UK Department for International Development (DFID), Post-Harvest Fisheries Research Programme, and SUFER Project (Support for University Fisheries Education and Research).
The views expressed here are not necessarily those of DFID

General Issues [1]

Issues	Synthesis of Current Situation	Suggestions for Policy Implementation
Declining catches of marine fish	Substantial increases of marine catches between 1975 and early 1990s. Since then gradual decline of catches, although some years are better than the previous one. Main reasons for decline: ➢ Overfishing due to: ▪ Industrial and smaller-sized wooden trawlers (e.g. 60hp); ▪ Unauthorised trawlers from neighboring countries; ▪ Use of more efficient / destructive gear, i.e. nets; ▪ Discarding of trash fish by trawlers; ▪ Use of push-nets (for shrimp fry collection), current (monofilament) net, and ESBN by the poor. ➢ Pollution due to agricultural chemicals, fertilisers, industrial wastage, oil discharge from boats, ship-breaking yards etc. ➢ According to fishermen, changes in the natural environment (e.g. changes in the seabed, siltation).	➢ Effective control of industrial trawlers and implementation of related laws; ➢ The issue of un-authorised fishing by foreign trawlers needs to be discussed and addressed at inter-governmental levels; ➢ In order to reduce destructive fishing by the poor, creation of alternative Income Generating Opportunities (IGAs), such as the promotion of more labour-intensive public works programmes (e.g. food / cash for work in coastal infrastructure development and maintenance), and identification of private sector activities in livestock, poultry, transport, etc. ➢ Stricter pollution controls; ➢ Improved involvement of poor coastal communities in decision making regarding fisheries management; ➢ Scientific assessment of fish stocks and changes in the natural habitat.

[1] Findings are based on Recommendations prepared in Project Meetings and Workshops

Unsatisfactory law and order situation	➢ Increasing levels of piracy in the sea and on the rivers, leading to loss of catch, gear, and lives; ➢ Extortion of money or fish from traders in the markets (e.g. Dhaka markets)	➢ Arrest piracy in open waters through deployment of Coastguard and other law-enforcing agencies; ➢ Community organisation and policing, with Government and NGO support; ➢ Advocacy by press, NGOs, and local communities.
Lack of Credit Access	➢ Hardcore poor (estimated at 20% of coastal population) don't have access to formal or informal credit; ➢ Micro-finance schemes often not appropriate for coastal communities; ➢ High opportunity cost of capital in informal sector (e.g. 5 – 15% per month interest in informal sector; this is also reflected in *dadan* transactions between traders and fishermen who don't have access to formal credit). ➢ Even larger-scale operators in the commodity chain (e.g. *aratdars*) don't have easy access to bank credits due to unfriendly procedures, collateral arrangements, etc.	➢ Policy formulation for micro-finance institutions (e.g. establishment of appropriate lending framework); ➢ Review and redesign of micro-credit products for coastal communities; ➢ Creation of special bank / financial institution that can address the needs of the coastal communities; ➢ Financing by NGOs against productive purposes on flexible terms reflecting local conditions (e.g. risk, seasonality, amount of loan required, income streams).
Government related Issues	➢ Weak local governance due to lack of clear policies and inadequate autonomy of local government; ➢ Inadequate government extension services related to fisheries, health, agriculture, etc.	➢ Improved formulation of policies and proper implementation thereof; ➢ Good governance; ➢ Review of the extension system; e.g. introduction of better accountability of services to the communities;

	➢ Gvt. Policies are characterised by: ▪ Inadequate addressing of poverty; ▪ Poor implementation; ▪ Coastal areas have weak representation at Central level.	more involvement of community based organisations (CBOs) in the delivery of extension services; ➢ Government should be more participatory, representative, and poverty focussed, as far as coastal areas are concerned;
Environmental degradation in coastal areas	➢ Coastal belt is very vulnerable to natural disasters; ➢ Erosion, in particular in riverine areas, aggravates this situation, leading to migration etc. ➢ Declining forest resources.	➢ Continuing efforts in disaster management, including awareness raising; ➢ Community based land reclamation project; ➢ Effective river management (e.g. tracing, fortification of river bank); ➢ Reafforestation, including mangrove forests; ➢ Fair distribution of *khas / char* land to the poor; priority should be given to the river bank eroded people.
Lack of alternative Income Generating Activities (IGAs)	➢ Due to declining fisheries resources, people require alternative IGAs; in the medium to long-term this should reduce the migration to the big cities.	➢ Study for identification of alternative IGAs, and action-research projects by Gvt. And NGOs; ➢ Improvement of infrastructure; ➢ Creation of skill base ➢ Creation of linkages with markets; ➢ Creation of pro-business environment, in particular at District level.

NB: In particular, declining fish stocks, piracy, and lack of credit access, were raised in fishing communities during Participatory Rural Appraisals, which took place between July 2001 and April 2002. In addition to their general nature, these issues also have an impact on fish marketing. The other, general issues were elaborated by the research team.

Marketing Related Issues

Issues	Synthesis of Current Situation	Suggestions for Policy Implementation
Lack of Community Organisation	➢ Fishing communities are better organised in relation to issues such as health or micro-finance, however lack exposure to community marketing skills; ➢ Lack of information in fishing communities on: ▪ Markets (e.g. prices, market opportunities, quality requirements), and ▪ Other aspects of daily life (e.g. education, health)	➢ Strengthening of community organisation; ➢ Pilot testing of marketing by community organisation (CBO), backed with the required financial and institutional support; ➢ Improved dissemination of information on markets and other aspects of daily life in fishing communities, through Coastal FM Radio Station cum Information Centre, and other media (e.g. residential training, videos, newsletters)
Lack of Infrastructure	➢ Markets often lack basic infrastructure such as ceiling, flooring, water supplies, drainage, etc. ➢ Despite substantial improvements of the road infrastructure, in particular	➢ Up-grading of market infrastructure, including drainage, water supply, roofing, market approach, etc. ➢ Up-grading should take place through private sector, including involvement of trader association (e.g. *Aratdar* Association in Chittagong, who have recently improved flooring of market). Reimbursement of costs to trader association by owner of the market following completion of works. ➢ Construction of low-cost cold storage, this may require incentives for private investors in the form of reduced interest rates from Gvt. banks.

	remote areas of the country still face accessibility problems; also, in some cities it is difficult to approach major wholesale markets due to their location in congested parts of urban centres. ➢ Unhygienic (but efficient) landing centres at community level;	➢ Continued efforts are required to improve the transport system, i.e. in particular feeder and community access roads leading to remote parts of the country. This includes ferry crossings. ➢ Landing centres should be up-graded through local government and community initiatives.
Inadequate post-harvest handling, including the supply of ice.	➢ Handling of fish on landing centres and in markets is often unhygienic; e.g. fish is exposed to high temperatures in retail markets with little ice used for preservation; ➢ There is oversupply of ice in some areas (i.e. in particular in urban centre during the lean fishing season) and under-supply in other parts of the country (i.e. in particular, during the main fishing season and in remoter areas lacking electricity). ➢ Insufficient amounts of ice are often used between catching and landing of fish; this may be due to shortage / cost of ice or fishermen underestimating the amount of ice required for transport in the boat;	➢ General awareness raising and provision of appropriate information / technologies is required. ➢ Improved local level planning of location of ice factories to avoid over-supply in some areas and under-supply in others. ➢ Continued efforts are required regarding rural electrification and regular supply of power; ➢ General awareness raising is required to improve the use of ice. ➢ Owners of mechanised fishing boats need to be encouraged to transport larger amounts of ice to fishing grounds. ➢ Identification and promotion of alternative uses of ice (e.g. in handling of dairy products).

Unexploited Potential for Dry Fish Exports	➢ There are already exports of dried fish to a limited extent to countries such as US, UK, Middle East and Far East. However, traders complain about a lack of exportable supply of dried fish (i.e. quality issues)	➢ Dissemination of information is required related to marketing opportunities and improved technologies; ➢ Strengthening of links between exporters and processors through NGOs, Chambers of Commerce, and Export Promotion Board.
Use of Pesticides in Dry Fish Processing	➢ Although it is generally not acknowledged by traders and processors alike, there is evidence that pesticides are used in dry fish processing, e.g. *Nogos, Basudine, Gamoxin,* DDT.	➢ Awareness raising is required at consumer, processor, and trader levels; care is required to avoid loss of livelihoods of poor people; ➢ Provision of alternative means of preservation. Identification of safe alternative means of controlling insect infestations (e.g. use of natural insecticides and predators; better handling and processing practices).

HOW SUSTAINABLE ARE LIVELIHOODS IN THE COASTAL FISHING COMMUNITIES? FINDINGS FROM A PARTICIPATORY RURAL APPRAISAL

Ranajit Dastidar and Utpal Dutta, CODEC

1. Introduction

1.1 Background to the Research Project

CODEC (Community Development Centre), NRI (Natural Resources Institute, University of Greenwich, UK) and the Sociology & Marketing Departments of the Chittagong University are managing a research project titled, "**Fish Distribution from Coastal Communities – Market and Credit Access Issues**", which is funded by the Post Harvest Fisheries Research Programme of the Department for International Development (DFID), UK. Field studies for the project were conducted in five coastal districts of Bangladesh. The research is stretched over March 2001 – August 2002. The ultimate goal of the project is to work towards poverty alleviation and livelihood security among the poor coastal fishing communities and those involved in the distribution chain.

The research was based on the hypothesis that coastal fishing communities in Bangladesh and the poor market participants are loosing out in the fish distribution chain and suffer from lack of access to credit sources. This was considered to result in a number of livelihood constraints, including low human, financial, and social capital base, and high exposure to seasonal and economic vulnerability. At the same time, there was a lack of information concerning the functioning of the commodity system and possible market inefficiencies such as exploitative practices. The project attempts to provide an improved understanding of the trading and credit system for fish produced in poor coastal communities, a validated methodology integrating market and credit analysis techniques with a livelihoods approach in a post-harvest fisheries context, and policy recommendations benefiting the poor in coastal fishing communities and the fish distribution chain in Bangladesh.

By improving the understanding of market and credit issues in the distribution chain of fish produced in coastal areas of Bangladesh, and the resulting policy recommendations, it is expected that in the medium to long-term the project will help to improve the livelihoods of poor operators in the commodity system. In particular, better understanding of the institutional context and relevant policy implementation ought to reduce the marginalisation of poor producers, traders, and processors. Involvement of key stakeholders such as GoB Departments, NGOs, private sector, and donor agencies, at different project stages is expected to facilitate uptake of project outputs.

1.2 The Sustainable Livelihoods Approach (SLA)

The Sustainable Livelihoods Approach (SLA) and the issues related to it have been dealt with at length by Ms. Nicoliene Oudwater of NRI in her paper titled "The Sustainable Livelihoods Approach and its Relevance for Fish Marketing". The paper was presented in the Inception Workshop ("Poverty Alleviation and Livelihood Security among the Coastal Fishing Communities: Market and Credit Access Issues") of the above-mentioned project held on 27-28 March 2001 at Caritas Auditorium, Chittagong, Bangladesh. An outline of the SL Approach is being presented in brief in the appendix for the purpose of this paper.

2. Fishing Communities in Five Coastal Districts of Bangladesh: Chittagong, Cox's Bazaar, Patuakhali, Bagerhat and Satkhira

The field study for livelihoods analysis, and also for market and credit access issues as well, took place in six fishing villages of five coastal districts of Bangladesh. The villages, in which PRA (Participatory Rural Appraisal) were conducted by the CODEC-NRI Team[1], are:

Name of Village	Union	Upazilla	District	Fishing HH (#)
Latifpur	Selimpur	Sitakunda	Chittagong	101
Hatkhola Para	Khurushkul	Sadar	Cox's Bazaar	111
Kuakata Panjupara	Lata Chapli	Kalapara	Patuakhali	198
Lebukhali	Lebukhali	Dumki	Patuakhali	74
Kulla	Kulla	Ashashuni	Satkhira	85
Debraj	Panchakaran	Morelgonj	Bagerhat	171

Besides the above villages, the team also conducted a few sessions in two more villages in Patuakhali (Kalaiya Jelepara in Baufal upazilla) and Satkhira (Gabura, a village adjacent to Sundarban).

In addition to the PRA sessions in those villages, the team also conducted Market Appraisals in the adjacent fish markets and those of the respective districts.

[1] The Team for fieldwork comprised of Mr Ulrich K. Kleih, Mr Ansen R. Ward & Ms Nicoliene Oudwater of NRI, and Dr Khursid Alam, Mr Kamal Sengupta, Mr Ranajit Dastidar, Mr Utpal Dutta, Ms Sharmen Sharon Rodriques & Ms Julia Chowdhury at different stages of the fieldworks.

2.1 Coastal Livelihoods Systems

2.1.1 Livelihood Assets of the Poor Coastal Communities

The assets or capital of the poor coastal communities include:

- Human Assets – people's strengths, skills and capabilities;
- Natural Assets – the natural resources around them;
- Social Assets – the support they get from the communities and families they live in;
- Physical Assets – the infrastructure they are able to use, like roads, water supply or ports; and
- Financial Assets – money that they get from the communities and families they live in.

The poor people combine the above assets at their disposal in different ways to make a livelihood.

2.1.1.1 Human Assets/Capital

The human capital of the poor coastal communities combines skills, specialisation, indigenous knowledge, education, health, nutrition, labour power etc.

The male members of the coastal fisherfolk of the Chittagong and Satkhira villages possess quite high skills and knowledge of fishing in the sea and river. They are fishing in the sea and river since several generations, the initiation of which they cannot remember readily. They get accustomed with the Bay since their early life. Their skill of fishing is also a sort of indigenous knowledge that has been acquired from their very surroundings. This human asset is a positive aspect of their livelihood. But their specialisation only in fishing limits (both culturally, economically and technically) their livelihood to only capture fishery. They cannot even opt for options in culture fishery (aquaculture in the fresh water). Only a very few of the Satkhira fishers are involved in shrimp culture. So despite of reported decline in coastal fish resources represented by 'reduced catch per unit effort' and also by an overall decline in marine fish catches, they are somehow circumstantially compelled to remain involved only in capture fishery and related activities. Until now, only a very few of them have taken rickshaw pulling and other wage-labouring activities as alternative ways of livelihoods.

Unlike their Chittagong and Satkhira counterparts, the fishers of Patuakhali, Bagerhat and Cox's Bazaar villages are not that much skilled in fishing in the sea and river, since they are relatively new entrants in this occupation. But, by this time, most of them have acquired minimum skill for fishing in the river and sea. Since, they are not specialised only in fishing, their relatively versatile knowledge and skill in cultivation, petty trading/peddling, rickshaw/van pulling, shop keeping etc. offer them options for adopting alternative strategies for livelihood during the time of need. However, open access resources like sea and river attracts unskilled exploitation of this wealth and this in turn makes the livelihoods of the poor vulnerable. For example, the unskilled shrimp-seed collectors often destroy a huge amount of fries of the other species, and this is one of the major reasons for depletion of fish or change of their (fish) habitats by moving and breeding far away from the coastline. So is the case of juvenile fishing by monofilament net (*current jaal*).

The other sections of the coastal poor stakeholders possess their minimum required skill and indigenous knowledge in cultivation of paddy & other food grains, petty trading/peddling, rickshaw/van pulling, shop keeping etc. for minimum maintenance of their livelihoods.

But most of the members of the coastal communities in all the six villages lack minimum primary education for enhancement of their livelihood skills. There are some Government primary schools now-a-days in different villages; but in most of the cases those are far away from the study locations. However, intervention for Children Education and Adult Literacy by the NGOs have been found to take place in the four study villages of Chittagong, Patuakhali and Satkhira districts; although in a limited scale to the members of their (NGOs) supported village organisations. There are no NGO interventions in two other villages of Bagerhat and Cox's Bazaar. Asked about the government sponsored adult literacy programme, named "Total Literacy Movement" (TLM) among the poor people of all the six coastal villages, the participants in the PRA sessions in all the locations expressed their sceptical views over it, since they get virtually no positive support on health, education, agriculture, livestock, fishery, embankment building/reconstruction etc from the upazilla administrations.

The poor health and inadequate nutrition of the children, women and old-aged members of coastal communities also inhibits their development. The overcrowding, poor sanitary condition (lack of adequate water-sealed latrines) and inadequate access to safe drinking water make their human assets, and consequently the livelihoods, more vulnerable.

The labour power of the coastal communities is considered as the most important asset. But most of the women members of the coastal communities remain unemployed from any income generation activities. Only a few women of the Chittagong village (Latifpur) are involved in fish vending and a few women of Kuakata Panjupara of Patuakhali are involved in shrimp-seeds collection. A few women of Kuakata and Hatkholapara (Cox's Bazaar) were also found to be employed in dry fish processing activities as part time wage labourers. On the other hand, the child labour in the agricultural fields and shrimp-seed collection activities may be considered as a negative aspect of their livelihood strategies, since the children in such activities are deprived of proper education and nutrition. While acknowledging this proposition, in the PRA sessions, the poor participants commented that they are forced to utilise their children as assets due to their abject poverty.

2.1.1.2 Natural Assets/Capital

The major source of natural asset or capital to the coastal poor of Latifpur (Chittagong), Hatkholapara (Cox's Bazaar) and Kuakata Panjupara (Patuakhali) villages is the **Bay of Bengal** and it (natural asset) is the river **Paira** to the Lebukhali (Patuakhali) fishers, river **Poilahara** to the Debraj (Bagerhat) fishers and river **Betna** to the Kulla (Satkhira) fishers. Besides, to a very limited scale, the khas (government owned) lands and embankments provide a living space for the poor people of all those villages. Some other canals and ditches in the vicinity of the villages are also the sources of livelihoods for the poor people. The ecosystem and biological diversity of these open-access resources provide substantial opportunity for livelihood security for the poor people of these coastal villages. But these open-access resources attract large number of poor people as a ***'sink'***, the process of which obviously leads to overexploitation of these resources. This in turn seriously endangers the livelihood security of the coastal poor.

It has been revealed from the PRA sessions in the fishing villages and also from the rapid market appraisals that there is an ongoing process of marine resources depletion, which is represented by 'reduced catch per unit effort' and an overall reduction of marine fish supplies in the market. In this regard a Trend Line of marine fish catches drawn by the Chittagong fishers in a PRA session has been appended in Appendix 2 of this paper, which shows a decline of catches from the 1990s.

2.1.1.3 Social Assets/Capital

The social asset or capital of the poor coastal communities of the six villages were viewed in terms of gender division of labour, existence of caste system and patronage networks, reciprocal self-help mechanism, low status associated with exploiting common pool resources (CPR) like the sea, river, khas land, embankments etc.

In all the six villages under study, there was found to be a clear gender division of labour among the poor stakeholders. In case of capture fishery, the male members of the fisherfolk of the six villages either fish in the Bay or in the above-mentioned rivers. There was not found even a single exception to it. The female counterparts of the fishers are mostly engaged in household management and activities. However, some women members of Latifpur (Chittagong) fisherfolk are involved in fish vending in the surrounding villages and market places. A few women of Kuakata Panjupara of Patuakhali are involved in shrimp-seeds collection and also a few women of Kuakata and Hatkholapara (Cox's Bazaar) were found to be engaged in net repairing and in fish drying activities as part time wage labourers. Some of the fisherwomen are also involved in sorting of fish immediately after the catches by their male counterparts.

The female counterparts of the poor coastal peasants get involved in threshing and sorting of crops while their male counterparts primarily undertake all the activities of crop cultivation in the fields. None of the participants, either male or female, in the PRA sessions, put any comments or arguments against this clear gender division of labour. It might indicate an exigency of gender division of labour in the coast.

But, this clear gender division of labour in the same type of broad economic activities in the same households also sheds a negative impact upon the livelihoods of the coastal poor during non-availability of fish and/or crop failure. In this situation, the female counterparts of the poor stakeholders also get unemployed and this in turn further marginalizes the poor households.

However, in the villages, there is also a crosscutting involvement of both male and female labour in income generation activities (IGA) like fish vending, shrimp-seed collection, petty trading (stock of crops and other perishable items that is locally known as *rakhi* business), livestock and poultry rearing etc.

There is also a presence of patronage network put forward by the *dadandars* in all the villages. This patronage network plays a strong role among the fisherfolk of Chittagong, although in other areas that role is not that strong.

Most of the fishers in all the villages are caught in the *dadan* tentacles. Somehow, they are compelled to sell their catches to the *dadandars*. Although this ensures presence of market for the produce of the fishers, but the very practice of the *dadan* transactions in this

interlocked market of credit & product in Chittagong is highly exploitative since the fishers have to sell their catches within a range of 20% to 40% discount of the normal market prices, and the prices are also determined by the *dadandar*s after sale of the catches in the markets far away from the village. In exchange of this benefit, sometimes the *dadandar*s somehow provide a sort of social security to the fisherfolk. They also lend some money to the fishers even for consumption and to meet emergencies in time of urgent need.

The poor fishers in the six villages carry a low social status since they resort to exploitation of the open-access common pool resources (CPR) for their livelihoods.

There were not found to be existence of indigenous social organisations of the fisherfolk, other than the ornamental *shamaj* entities, in the six villages. However, the NGO interventions in the four villages of Chittagong, Patuakhali and Satkhira led to the formation of village organisations comprising of the members supported by the NGOs. But, among the four villages, there are fisherfolk organisations only in Latifpur (Chittagong) and Kuakata Panjupara (Patuakhali) where CODEC (Community Development Centre) has its interventions for the fisherfolk communities. These organisations, supported by the NGOs, pave the way towards social, economic and political empowerment of the coastal communities.

2.1.1.4 Physical Assets/Capital

The minimum physical asset or capital required for the poor people in the coastal area combines health facilities, access to safe drinking and fresh water, housing, appropriate indigenous technology, economic and infrastructure development in the coastal belt, cyclone shelters, indigenous means of production, market access, electricity and telecommunication etc.

In general the minimum health facilities required for the coastal poor in the six study villages are very poor. There are no government hospitals or health centres near the villages of the six locations. In Chittagong, an NGO provides elementary health services, to some extent, through its field hospital in the vicinity of the village. There is virtual absence of required immunisation support for the mothers and children in the study villages from the side of the government. The working NGOs periodically undertake such activities, whenever they can arrange.

Tube wells or fresh water bodies for safe drinking water are also inadequate in the coastal villages. Government or local government initiative in this respect is frustrating. The NGOs working in the communities install some tube wells in the vicinity of their members' residences. There is also a reported problem of arsenic for the tube wells in some fishing villages, especially in Satkhira.

The housing facilities of the poor coastal communities in the study villages are very poor due to meagre income and overcrowding. The frequent cyclones and floods very often destroy their houses along with other livelihood assets.

In the coastal villages adoption of appropriate indigenous technology seemingly appears to some extent. The women, and also the men, get often engaged in mending their own nets and even weaving new nets. Sometimes, the poor female members of the fishing villages get periodic employment for weaving nets. The fishers also repair their own boats. The

rickshaw/van pullers are also equipped to deal with their elementary problems. But, the indigenous means of production are gradually replaced by the mechanised ones, although the peasants are principally dependent on the indigenous ones.

In the coastal villages, road communication is in a very bad shape. Most of the village roads are non-bricked and non-metalled. A few semi-metalled roads in Chittagong, Cox's Bazaar and Patuakhali villages are in very bad shape with many pot-wholes here and there. The muddy roads of the villages are virtually inaccessible for the rickshaws, vans and motorised vehicles. This seriously limits access of the catches, crops and other goods of the shops to the required market places. This in turn affects the livelihoods of the coastal poor adversely.

Want of required cyclone shelters in the vicinity of the coastal villages also seriously affects the lives and livelihoods of the coastal communities. The participants in the PRA sessions in Kuakata Panjupara complained that the only cyclone shelter in Kuakata, Patuakhali is now being used as the rest house of the LGED (Local Government Engineering Department) officials.

2.1.1.5 Financial Assets/Capital

The financial asset or capital of the poor coastal communities is the amount of money that they can use to get more of the other assets. The sources of the financial capital for the poor people of the six villages are the informal credit market and the quasi-formal credit market. The chief actors of the informal credit markets are the *dadandars* and the moneylenders, while the NGOs are considered as the actors of quasi-formal credit market.

They have got no virtual access to the formal credit market (scheduled banks) due to lack of bankable assets.

The source of finance for fishing in the coastal villages, especially in Chittagong, is principally the ***dadan*** and usury market. In the usury market, the moneylenders generally lend money at an interest rate of 120-240% per annum. On the other hand, ***Dadan*** is a sort of monopsony transaction built upon an uneven lending contract (often verbal), even before production, in favour of the lender/purchaser of produce to sell the produce to him/her at a price much lower (usually 20% - 40%) than that of the normal market, or against a certain percentage of commission (usually at 5% of sales revenue or Tk. 5 – Tk. 10 per Kg of fish). Most of the fishermen resort to the dadandars for finance and they have to hand-over their all catches to the dadandars; particularly in Chittagong at about 20% to 40% less than the normal market price. Sometimes, they (Chittagong fishers) do not even get the revenue or know the price of their fish on the day of catch and sale. The dadandars fix the prices after sale of the fishes in the wholesale market far away from the village.

However, in Cox's Bazaar, Patuakhali, Bagerhat and Satkhira villages the *dadandar*s are mainly commission agents. The fishers have to sell their catches to the buyers (*paiker*s) through the shops/warehouses (*arat*) of *dadandar*s, and the dadanders reap 5%-10% commission on the revenue from the fishers. The rate of usury interest is also less (generally 120% per annum) in these five other locations compared to that of Chittagong.

On the contrary, the NGOs (e.g. BRAC, Proshika, CODEC, ASA, Grameen Bank etc.) provide loans only to their organised poor members and they offer the subsequent loan only after repayment of the former one, whereas the *dadandar*s advance money even before non-

realisation of the previous amount. Some of the participants in the PRA sessions commented that the amount of finance being provided by the NGOs is insufficient and this amount does not commensurate to the poor people's actual need.

However, in the Chittagong village CODEC has introduced a new product of finance called ***Dadan*-free Loan** (usury debt redemption loan) to free the fishers of CODEC supported Village Organisations (VO) from the clutches of *dadan* and usury market. To this end, after proper assessment and verification, they repaid the *dadan* and/or usury loan to the respective *dadandar*s and/or moneylenders directly in presence of the borrowers and also advanced the required amount of working capital to the respective fishers of the CODEC-supported VO. In this way, CODEC has provided *Dadan*-free Loan up to Tk. 75,000 to a single fisherman. So far, CODEC has provided such type of long-term loans (payable within 3 years) to 110 fishing households on pilot basis. Introduction of this new loan product led to a significant reduction in *dadan* dependence. However, a few fishers could not repay the loans in time due to piracy of their catches and fishing gears in the sea.

Although the dadandars and the moneylenders are the chief sources of finance for the poor stakeholders, the very process of overexploitation, both in the credit and product markets, marginalizes the fishers to a large extent and almost all of the fishing households are enchained with dadan and/or usury transactions. Besides, the incidences of dadan are also prevalent among the shrimp-seed collectors and peasants, whereas borrowing from the moneylenders is prevalent among the shopkeepers.

2.1.2 The Vulnerability Context (VC) of the Poor

The vulnerability context is the group of factors operating in the external environment, in which people exist, that may affect their susceptibility to poverty. The livelihoods which people adopt, and the livelihood outcomes they aspire to, are greatly affected by the vulnerability context. There are three key areas that broadly summarise the factors contributing to the vulnerability context. These are **shocks**, **trends** and **seasonality**.

Shocks such as cyclones and floods are quite common in the coastal areas. There is also a **trend** towards increasing environmental degradation in coastal areas. Besides, **seasonality** affects fish catches, work availability, market needs etc.

2.1.2.1 Shocks

All the six villages under study are prone to frequent **cyclones and floods**. Especially, Latifpur (Chittagong), Hatkholapara (Cox's Bazaar) and Kuakata Panjupara (Patuakhali) are quite open to the sea. Besides the storms and floods in almost every year, the devastating cyclones (accompanied by tidal surge) of 1964, 1970 and 1991 caused severe damage to the lives and livelihoods of the villagers of the six locations along with most of the coastal areas of Bangladesh. In 1997 the Chittagong, Cox's Bazaar and Patuakhali villages were again hit by a severe cyclone accompanied by floodwaters, which made many of the villagers homeless with consequent loss of their assets. In addition to that, along with a large part of Bangladesh, the villages of Patuakhali, Satkhira and Bagerhat were also severely affected by the prolonged flood of 1998. The coastal people of Chittagong were also affected in 1988, because their catches of fish, vegetables, crops etc. could not be delivered to Dhaka and many other districts because of blockade of roads and communications for a long period due to the

flood. The Satkhira village again came under flood attack in the year 2000. Moreover, the unusual high tides in the Bay often damage the houses and other resources of the poor of Chittagong, Cox's Bazaar and Patuakhali, who live near the seashore or embankments.

Besides the cyclones and floods, like many other people of Bangladesh, the livelihoods of the coastal poor are being affected by the frequent ***hartals*** (closure of normal activities and transportation due to call of general strike) and other political unrest like road blockade etc. During these days, the perishable products like fish and vegetables get damaged and the poor people have to sell those at a very cheap price; sometimes they even fail to get any revenue of their products due to decomposition of those. The rickshaw pullers and the shopkeepers & petty traders also face loss during these days for obvious reasons.

Besides the above, now a days, another kind of shock is **piracy** in the sea and river that seriously affects the livelihoods of the poor fishers adversely. Piracy is very rampant in the Chittagong, Cox's Bazaar and Patuakhali coasts, and almost daily the fishers along this coastline are facing the act of piracy of their fishing gears and catches in the sea. Later on, Chittagong fishers again buy their snatched fishing gears from the pirates near the big fish-landing station in the Chittagong city. Piracy also takes place occasionally in the Betna and Poilahara rivers along the Satkhira and Bagerhat villages respectively. The participants complained about the piracy in all the PRA sessions in the six locations. In Chittagong and Cox's Bazaar, the discussions took substantial time on this issue. In this year and the last ones, the local and daily newspapers also published several reports of piracy in the Bay of Bengal. Theft of livestock and poultry is also prevalent in the villages.

Another kind of shock is **accident** in the sea/river and road. In almost every year there are reports of accidents in the sea/river due to which the poor either loose their lives or limbs.

2.1.2.2 Trends

There is a very high trend of resource depletion, erosion and environmental degradation in all the six study villages. These trends of vulnerability have been coupled with some other trends like sea level rise, increasing population & resource conflicts, technology change and incidences of diseases in those coastal areas.

In all the six study villages, and the coastal area of Bangladesh as a whole, depletion of marine and riverine resources like fish is a major trend of vulnerability context in which the coastal people operate. As says in the later part of this paper, activity of *Hilsha* fishing is a major seasonal event over a substantial period in the four villages of Chittagong, Cox's Bazaar & Patuakhali, and Bangladesh as a whole. Since mid 1990s catch of *Hilsha* is declining at an increasing rate.

In the initial 2 months (June – July) of the *Hilsha* season, there is virtually a very meagre amount of catches. In most of the daily fishing trips during these months, the poor fishers fail to get any substantial catch. They complained that, during these days, they have to waste all of their fuel and other costs along with their labour time. This situation badly affects the livelihoods of almost all the coastal poor for obvious reasons. Even the city dwellers in Bangladesh are also affected since the price of *Hilsha* went-up 2 to 4 times high in the market. Only the relatively big mechanised trawlers can harvest an amount of *Hilsha* in the deep sea far away from the coastal villages, which the artisanal fishers cannot do due to

limitation of their fishing crafts and gears. There were several newspaper reports of this plight in these months.

One participant in one of the PRA sessions in Kuakata Panjupara (Patuakhali) commented that in the not too distant future the *Hilsha* would take its place in the museum. However, this situation has improved to some extent in the recent times. The old fishers of Chittagong told in the PRA discussions that even during their early days they could fish enough almost through out the year, with a very brief gap, and they used to get several species of fishes. But, now a day, their fishing has been reduced to virtual 'monoculture' of *Hilsha*.

In the six study locations the participants in the PRA sessions assigned the following reasons for resource depletion in the sea and river (which leads to "reduced catch per unit effort" and potentially overall decline of supply in the long term):

1. Increasing numbers of people are engaged in fishing with different types of nets. Number of nets per fisher also increased to a substantial extent.
2. Big commercial trawlers fish in the sea indiscriminately and they throw a large amount of unwanted fish (they consider these as trash fish) in the sea. Since the trash fishes are already dead, this process destroys the fish habitat. But, one chief executive of a leading commercial fish exporting company of the country recently reported in a meeting in Chittagong that since last few years their commercial trawlers are not throwing fish on the seabed because, now-a-days, all the species of fish are commercially worthy for them.
3. Sometimes the big commercial trawlers fish quite in the artisanal fisher' fishing zone (les than 40 metres depth), which they are not allowed to do in accordance with the 'rules' they should follow or the permission they got for using fishing grounds.
4. The Thai and Indian trawlers are involved with theft fishing in the zone of Bangladesh.
5. Oil-discharge in the sea by the scrap-vessels of the ship-breaking industry destroys fish habitat. The floating oil on a large area of seawater inhibits sunlight to get into the water that is required for fertilisation of egg. But this proposition could not be ascertained or investigated in more detail.
6. Discharge from factories like chemicals, fertilizer, tannery etc. destroys fish habitat.
7. Discharge of chemical fertilizers and pesticides into the sea and rivers from the agricultural fields along with monsoon water.
8. The fishers of Chittagong village complained that the recently built Shangu Gas Field (exploring gas from the sea) near to the village affects adversely their fishing by destroying fish habitat. However, they could not properly explain how.
9. To cope with the situation of gradual non-availability of fish in the near shore, fishing has been mechanised. Most of the fishing crafts are motorised. So, fish habitat moves further away.
10. Overexploitation of resources like catch of juvenile fishes (juveniles of Hilsha are locally termed as *jatka*, catch of which is banned) with rampant use of monofilament net (locally known as *current jaal* – weaving, sale and use of which are already banned) and estuarine set-bag net (ESBN, which are going to be banned and now being discouraged by the Department of Fisheries) also depletes the stock.
11. The unskilled process and act of shrimp-seed collection from the sea destroys a huge amount of different fish species, which is a potential source of fish depletion.

Erosion in the coastal villages, especially along the bank of the rivers, and also along the Chittagong coast of the Bay, is a serious threat to the lives and livelihoods of the poor stakeholders. The fishing hamlets of Lebukhali (Patuakhali), Debraj (Bagerhat) and Kulla (Satkhira) are under the active process of riverbank erosion. These villages are eroding away every day which is causing serious vulnerability to the livelihoods of the poor. On the other hand sea level rise is also a context of vulnerability for the poor people of Chittagong, Cox's Bazaar & Patuakhali, and the coast of the Bay of Bengal as a whole.

Environmental degradation like land accretion due to siltation under the sea/river is also considered as another trend of vulnerability of the poor coastal communities. In the coast of Chittagong, Cox's Bazaar and Kuakata and also in the rivers of the remaining villages, the poor are facing the threat of the same problem. Due to land accretion under water, the fish habitat moves further away from the existing fishing zone causing a trend of additional vulnerability for the poor stakeholders. This process also affects other sections of the poor due to hindrances to navigation.

The prevalence of disease among the poor people and their livestock & poultries is also a trend of vulnerability to their lives and livelihoods. Due to poor health and sanitary condition, outbreaks of diseases like diarrhoea, dysentery, cholera, hepatitis, fever etc. are quite common among the poor people of the six villages. The incidences of diseases are high among the fisherfolk of Latifpur (Chittagong) and Lebukhali due to their overcrowding and contiguous living cum ill sanitation.

2.1.2.3 Seasonality

The livelihoods of the poor stakeholders of coastal Bangladesh are at a very high exposure to seasonal fluctuations. The fishers as well as the peasants, rickshaw pullers, petty traders etc. of the coastal villages are quite vulnerable to seasonal fluctuations.

The coastal life is characterised by a high degree of seasonality and uncertainty. In Latifpur, and along the Chittagong coast, the major season of fishing is mid-July to mid-November (i.e. only 4 months) although the catch gets thin during the last month of this period. Along the Patuakhali coast, the peak season starts during late March and continues up to early September (i.e. a 6 month season). In this season the fishers catch mainly the *hilsha* fish in the Bay and in its estuaries through gill net and engine boat or country boat (in Kuakata Panjupara). In every month of this peak season, there is again a peak week (they call it *Jo*) of catch followed by a lean week of catch (they call it *dala*). That is, their peak fishing is only 50% of the major season.

In Chittagong, they catch mainly *Bombay duck* and other few species of estuarine fishes during the following 5 months (mid-November to mid-April) with estuarine set-bag net (ESBN) and small engine-boats in the Shandwip Channel, an offshoot of the Bay of Bengal. The ESBN-season is considered as a lean season. There is also a "peak week followed by a lean week" syndrome in this lean season. So, their catch is further marginalized by 50% even in this lean season. They virtually cannot fish anything in the sea during the remaining 3 months (mid-April to mid-July) partly due to non-availability of fish at that time due to high salinity in the coastal waters (in this period fish move towards the deep sea and partly for taking preparation (net mending or weaving, boat repairing, finance mobilisation) for the ensuing major season (for *hilsha*). Moreover, the catch per unit effort is declining day by day

and since mid 1990s they are getting a very scanty amount of fish, and consequently a meagre income, even in the peak season. However, with a peak season of 8 months the fishers of Patuakhali can fish in the Bay more or less throughout the year with the same syndrome of peak and lean week.

2.1.3 Institutional and Political Context : Policies, Institutions & Processes (PIP)

In the context of **transforming institutions**, these are the institutions and organisations like government, NGOs, social & religious organisations and markets that can either make it easier or more difficult for the people to get the assets they need and turn them into a livelihood. Government can "govern well" and implement good policies that support poor people and get help to them; and NGOs can implement appropriate programmes that focus on the poor.

Transforming **processes** are the different rules and regulations that influence people's ability to use their assets effectively. These might come from the government, the market or the community itself. For example, good policies from government will encourage development, create jobs and make it easier for poor people to have access to the assets they need to stop being poor.

If some coastal areas people have a very low social status or belong to a particular caste, such cultural processes might make it very difficult for them to get involved in some development activities. This may limit their livelihood options.

The transforming **structures**, on the part of the government, intended also for the coastal villages in Bangladesh are the various departments in an upazilla administration under an executive officer of the government known as the Upazilla Nirbahi Officer (UNO). The departments are: Agricultural Extension, Fisheries Extension, Rural Development, Health Complex/Centre, Land Settlement, Education Extension, Family Planning, Cooperative, Social Welfare, Special Project and Police Station etc. Besides, some other government departments like Relief and Rehabilitation, Meteorological Office, Water and Power Development Authority (WAPDA), Rural Electrification Board, Local Government Engineering Department (LGED), Public Health Engineering (PHE), National Economic Council (NEC), etc. are also responsible for transformation and rural development of Bangladesh. In every union and village there is a local government authority, which is the authority and means for rural development.

There is also prevalence of markets in one or another form which also work as transforming structure for the coastal livelihoods.

Some religious and social organisations also prevail in the coastal areas, which also play some role as transforming structures.

There is a strong existence of caste system among the fisherfolk communities in the villages of Chittagong and Satkhira. Actually the total coast of Chittagong is marked by predominance of caste structure among the fishing community. The fisherfolk hamlets of Chittagong are inhabited by the Hindu Jaladas fishers. By virtue of caste rule, the fishers of Chittagong and Satkhira villages have been fishers for generations and, due to the caste system, they have little choice to look for any other type of occupation. The *Jaladas* of

Chittagong and the *Rajbongshi* of Satkhira are the castes traditionally belonging to the lowest *varna* (known as *sudra*) among the Hindus and the hereditary occupation of these groups is fishing. As such, Hindus engaged in fishing face serious problems in entering into any 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 slim as increased numbers of Muslim peasants are also facing problems to find jobs in the agriculture sector.

The villages in four other locations do not represent existence of any caste system as such, although there is an overwhelming predominance of Muslims among the coastal people of these villages. However, there is also existence of one or more *shamaj* (society) in all the villages and both among the fisherfolk and non-fisherfolk.

In Bangladesh, NGO activities are well known to all concerned for their different programmes and activities. Most of the major NGOs (e.g. BRAC, Proshika, ASA, Grameen Bank, CODEC, COFCON members etc) have different poverty focussed programmes. But only a few have programmes exclusively for the coastal poor.

The participants at the PRA sessions in all the locations complained that they don't get any substantial support, that are publicly committed, from the different governments departments. Moreover, the rules and regulations concerning the coastal communities are not being effectively implemented. For example, piracy in the sea and rivers is going on unabated.

Although the different markets in the coastal areas facilitate the livelihoods of the coastal communities to a substantial extent, the over exploitative mechanism of the credit and product markets further marginalizes the poor.

There is a prevalence of only a few social organisations that play a somehow positive role for the poor. But the religious organisations and the leaders often play a negative role through a campaign against the NGOs' development activities and female participation in the various livelihood activities.

The NGOs like Proshika, BRAC, ASA, Grameen Bank and others have got poverty-focussed programmes for the poor people with their essential limitations; although only a few NGOs including CODEC and other members of COFCON (Coastal Fisherfolk Community Network) are involved only with the coastal communities. The NGO activities are centred on organising the poor into their own (poor) organisations, providing non-formal children education & adult literacy, awareness and skill development training, micro-finance, health & sanitation, safe drinking water, legal awareness & support etc. and to play an advocacy role to eradicate poverty. In addition to these programmes, CODEC, a major NGO involved with only coastal communities, has also introduced debt-redemption loans for the coastal poor to free them from overexploitation of *dadan* and usury market. But, the NGO activities also have their many limitations. On the one hand, they cover only a small number of the coastal poor; and on the other hand the role of the government and its activities cannot be substituted by them (NGOs).

2.1.4 The Livelihood Strategies which the Coastal Poor Adopt

Actually the coastal poor are left with very few options. So, there is a serious limitation for them for adoption of strategies for sustenance of their livelihoods.

The major strategy is to use the open-access common pool resources like sea, rivers, canals, other open-water bodies, khas lands, embankments, hills & forests etc. The very process of perpetuating poverty leads them to overexploitation of the common pool resources, which in turn endangers their livelihoods in the long run. Due to abject poverty and for want of alternative income generation activities, they tend to kill juvenile fishes, destroy fish fries, forests and embankments etc. disregarding the ban imposed by the government and society as a whole.

Another strategy of the poor is to change their occupations frequently, whenever possible.

One of the strategies of the poor is to have as many children as possible, since they consider the children as their working hands and option for present and future income. This leads to population increase in the coastal areas. However, they invariably prefer male children because of predominance of male chauvinism in the society.

In Patuakhali and other coastal region, migration to big cities is one of their major strategies. After failing all options in their respective villages, everyday, the poor people are migrating to the big cities. However this process of migration further marginalizes their livelihoods and also affects city habitat.

Some of the people in the coastal areas still hope that if they can bring up their children with education, they (children) will be able to provide livelihood security in future. But, due to paucity of income, they often fail to accomplish their dream.

One option left for the poor, is to be associated with the NGO activities. But, there is also a limitation. The very model of the NGOs cannot properly address the problems of the hard-core poor because of their inability to pay savings and repay loans in accordance with the NGO rules & regulations.

2.1.5 The Linkages between the Strategies of the Poor and Policy Processes

It has been opined and observed that the policies concerning coastal communities are not often rooted in ground realities and the policy formulation process is too remote and inaccessible for the communities concerned, although participation of the stakeholders in that process is all the more necessary for proper formulation and implementation. Consequently, the existing policies and processes address the issues of poverty improperly and inadequately.

It has been observed in the coastal villages that the inadequate policy processes are actually criminalizing the poor. For example, for adoption of survival strategy due to abject poverty, the poor people are being forced to fish *jatka* (the juvenile *Hilsha*) with *current jaa*l (monofilament net), although catch of jatka and use of current jaal is totally banned. Since there is no other alternative, and immediate survival is the natural priority for the poor, they are increasingly getting involved in this type of destructive fishing at the expense of their livelihood sustainability in the long term. In this process of criminal acts, they sometimes

loose their assets like nets and the catches, whenever the police force come in to destroy those assets. Sometimes they can save their nets and catches through bribing the police. Even the fish vendors have to bribe the police and market authority to get permission to sell jatka. As a result, the inadequate policy process not only criminalizes the poor, it also further marginalizes them even in the short run. The same is the case of shrimp-seed collection, which is going on unabated.

However this sort of policy process not only criminalizes the poor, it also criminalizes the policy implementers (police & the concerned people) as well as the well-off business persons, since they are involved with selling of the banned nets or threads of it. The government is contemplating banning of destructive nets like ESBN, Push Net etc. In absence of sustainable alternative, this type of policy will have an adverse immediate impact on the livelihoods of the poor.

2.1.6 Livelihood Outcomes amongst the Coastal poor

Pressure on the coastal resources is increasing at a fast rate. Due to its very open nature and relatively free access, it attracts a large number of the poor people from other sectors, mainly the agricultural sector (i.e. there is also a process of migration to the coast). Mainly due to perpetuating poverty and the very process of landlessness over time, the poor people take resort to this open access resource.

Since the coast is vulnerable to natural disasters like cyclones, floods, erosion etc. it is indisputable that the natural resource base in the coastal environment is eroding at a rapid rate, exacerbated by increasing human interactions on the ecosystem, and it was agreed in different phases of discussions of field-validation that it is often the poor people who are adversely affected by this decline.

The coastal environment is also marked by its vulnerability to externalities from other sectors and upstream activities. Besides, it also acts as a 'sink' of another kind: by virtue of its open access nature, further increasing the pressure on the resources.

In all the six villages it was observed that the poor stakeholders live in congregation either on the embankments or very near to the shore. This congregation is rapidly increasing due to influx of new people into this area and also due to high birth rate among the coastal population. This increasing pressure on the embankments and shores leads to destruction of forest, mangroves and other resources. As a result, the livelihoods of the poor are affected adversely. Moreover, any act of natural disaster directly affects the lives and livelihoods of these people further perpetuating their poverty.

It was frequently reported and seen that there is very inadequate or scanty amount of shelters left for the poor for taking resort during natural disasters. This increases their vulnerability to natural disasters and also adversely affects their livelihoods.

The PRA sessions revealed that in all the study villages, on average, the household size is higher than that of the national average (5.6 persons per household in 1991; source: 1997 Statistical Year Book of Bangladesh, 18th Edition, Bangladesh Bureau of Statistics, Dhaka, Bangladesh, September 1998). This increase in population gradually creates pressure on the declining coastal resources.

All the discussions reiterated the findings that "catch per unit effort" is declining day by day due to increase of fishers, fishing gears and mechanisation in the sea and rivers; and also due to overall depletion of fish. But this ever-reducing "catch per unit effort" and associated overall depletion of marine fish stock is not only affecting (adversely) the livelihoods of the fisherfolk alone; rather it severely creates pressures upon the livelihoods of other coastal communities as well.

The coastal villages are overcrowded and consequently, the health and sanitation condition is very poor in those villages. In all the three villages the poor people have to live in huddling together in their houses and the houses are also very close to each other. This situation paves the way to ill sanitation and generation of diseases like diarrhoea, dysentery, cholera, hepatitis, fever etc. In this context, the condition of the fisherfolk hamlet of village Latifpur of Chittagong was found to be the worst among the six study villages.

Above all, **piracy** in the sea and rivers is seriously affecting their livelihoods and lives as well.

To deal with the depleting marine fish resources and supply depletion syndrome, identification and adoption of alternative income and employment generation activities is one of the urgent tasks for the concerned quarters.

Appendix – 1

The Sustainable Livelihoods Approach (SLA): A Brief Exposure

What is a Livelihood?

The word "livelihood" can be used in many different ways. It is used here to mean: the capabilities, assets and activities required for a means of living.

What are Sustainable Livelihoods Approaches?

Sustainable livelihoods approaches (SLAs) are ways of understanding the needs of the poor and setting the objectives of development so that they respond effectively to those needs. "Livelihoods" are the ways people combine their capabilities, skills and knowledge with the resources at their disposal to create activities that will enable them to make a living. A "sustainable livelihood" is one that can be carried-on now and in the future without depleting the resources it depends on and without depriving other people of a livelihood. It can also be carried on in spite of shocks or changes like natural disasters or seasonal cycles. SLAs aim to make development more effective by putting people (rather than resources, sectors or technology) at the centre of the analysis. The approaches look first at the "subjects" of development – poor people – and analyse the different assets they have at their disposal.

Sustainable Livelihoods Approach encompasses activities intended to help economically disadvantaged members of society meet their daily subsistence needs in a manner that is dignified, locally appropriate, and environmentally sustainable. Sustainable Livelihoods Approach takes a holistic view of tackling poverty, and puts poor people and their priorities at the centre of development.

The principles of the SL Approach demand a shift in focus from outputs to people, and an exploration of poor people's own priorities. It is People centred and participatory. The Sustainable Livelihoods approach focuses on development activities that are based on the priorities of poor people. For such an approach to be effective poor people themselves must play a key role in identifying and addressing those priorities.

There is a consensus that SL approaches comprised two elements: the **SL Guiding Principles** and the **SL Framework**. The tools and methods used to put sustainable livelihoods into practice are essential but not specific to SL approaches.

The SL Guiding Principles are a guide to the main concerns of sustainable livelihoods. They are the defining characteristics of development interventions that have been designed to address issues identified through the use of the SL framework. But they are only guiding principles. They neither prescribe solutions nor dictate methods, not least because the guiding principles themselves prioritise flexibility and adaptation to the diverse nature of local conditions. Thus, SL guiding principles are to:

1. **Be people centred**: SL approaches start by analysing people's livelihoods and how they change over time. SL approaches engage the active participation of the target population throughout the project cycle.

2. **Be holistic**: SL approaches acknowledge that people adopt multiple strategies to secure their livelihoods. Livelihoods analysis is applied across sectors, geographical areas and social groups. SL approaches recognize multiple actors (the private sector, ministries, community-based organizations and international bodies).

3. **Be dynamic**: SL approaches seek to understand the dynamic nature of livelihoods and the influences on them.

4. **Build on strengths**: SL approaches build on people's perceived strengths and opportunities rather than focusing on their problems and needs. They support and enhance existing livelihood strategies and coping mechanisms of the poor. (Even the poorest households have potential.)

5. **Use micro-macro links**: SL approaches examine the influence of macro-level policy and institutions on livelihood options and highlight the need for policy to be informed by insights from the local level and by the priorities of the poor.

6. **Aim for sustainability**: Sustainability is important if poverty reduction is to be lasting. Sustainability of livelihoods rests on several dimensions.

The Assets or Capital of the Poor include:

- Human Assets – people's strengths, skills and capabilities;
- Natural Assets – the natural resources around them;
- Social Assets – the support they get from the communities and families they live in;
- Physical Assets – the infrastructure they are able to use, like roads, water supply or ports; and
- Financial Assets – money that they get from the communities and families they live in.

The poor people combine the above assets at their disposal in different ways to make a livelihood.

The Vulnerability Context Of The Poor

The ***vulnerability contex***t is the group of factors operating in the external environment in which people exist which may affect their susceptibility to poverty. The livelihoods which people adopt, and the livelihood outcomes they aspire to, are greatly affected by the vulnerability context. There are three key areas that broadly summarise the factors contributing to the vulnerability context. These are ***trends***, ***shocks*** and ***seasonality***. In many places there is a *trend* towards increasing environmental degradation in coastal areas. *Shocks* such as floods and cyclones are common. *Seasonality* can affect work availability, fish catches, market needs and many other factors.

Policies, Institutions and Processes

Transforming **institutions** are the institutions and organisations like government, NGOs, social & religious organisations and markets that can either make it easier or more difficult for the people to get the assets they need and turn them into a livelihood. Government can "govern well" and implement good policies that support poor people and get help to them; and NGOs can implement appropriate programmes that focus on the poor.

Transforming **processes** are the different rules and regulations that influence people's ability to use their assets effectively. These might come from the government, the market or the community itself. For example, good policies from government will encourage development, create jobs and make it easier for poor people to have access to the assets they need to stop being poor.

If some coastal areas people have a very low social status or belong to a particular caste, such cultural processes might make it very difficult for them to get involved in some development activities. This may limit their livelihood options.

The SL Framework

The SL framework is an analytical tool for understanding livelihoods systems and strategies and their interaction with policies and institutions. However, it needs to be made context-specific. This will often imply changing or adding elements to reflect local social, cultural, political and economic realities. A wide range of diverse tools and methods may be used to design and implement projects that can contribute to achieving sustainable livelihoods. These methods, however, are not exclusive to SL approaches.

The Sustainable Livelihoods Framework and principles are tools to guide our understanding and practice when planning & implementing development activities and also subsequent measuring & interpreting the outcomes & impacts of those development activities.

The Sustainable Livelihoods Framework presents the main factors that affect people's livelihoods, and typical relationships between these. It provides a way of thinking through different influences (constraints and opportunities) on livelihoods, and ensuring that important factors are not neglected.

In particular, the SL framework:

Provides a checklist of the important issues and sketches-out the way these like to one another;

Draws attention to core influences and processes; and

Emphasises the multiple interaction between the various factors, which affect livelihoods.

As a conceptual framework the SL framework draws attention to the need to measure changes in the different factors that contribute to livelihoods:

- Changes in capital assets
- Changes in institutional structures and processes
- Changes in the resilience or vulnerability of livelihoods
- Changes in livelihood strategies

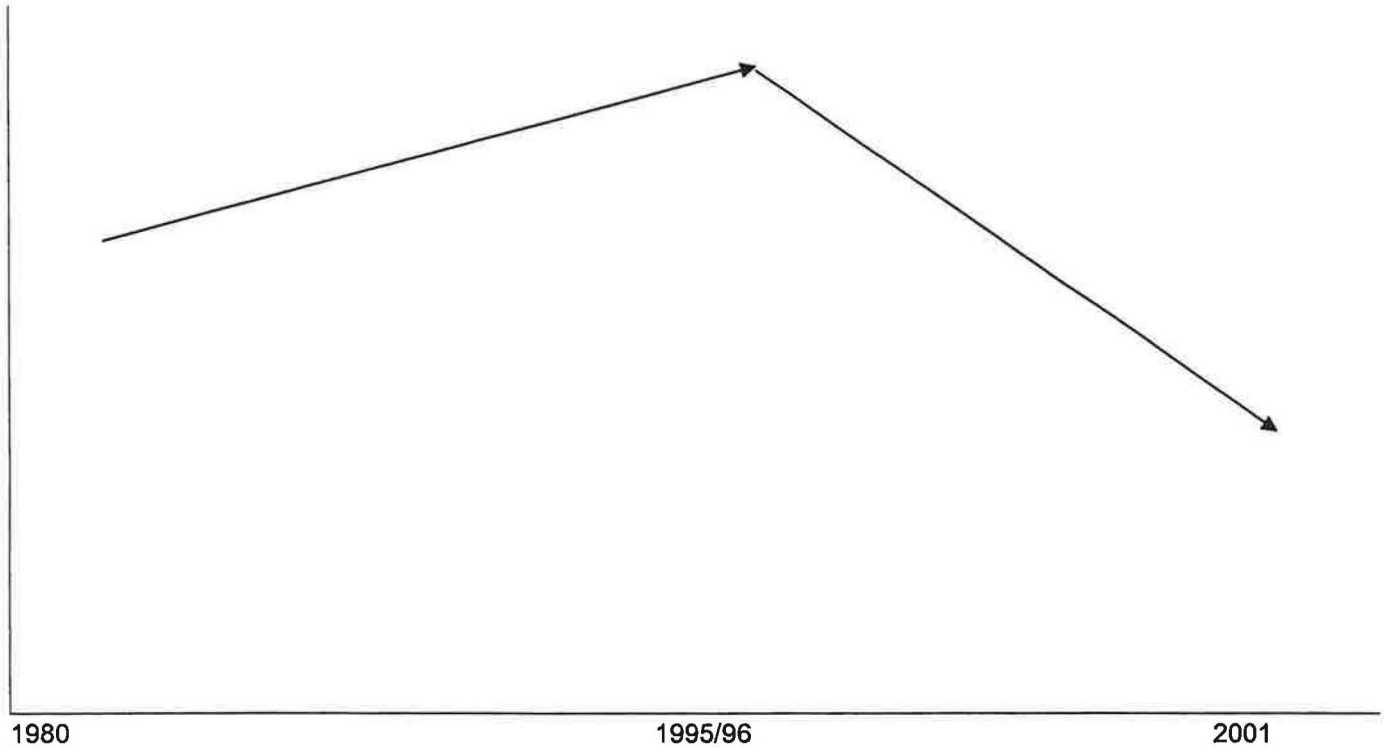
- Changes in livelihood outcomes

It also draws attention to the relationships and feedback loops between these different elements, and between macro- and micro-level changes such as:

- Relationships between policies, institutions and processes (PIPs) and the vulnerability context.
- Relationships between access to assets and improved livelihood outcomes.
- Relationships between national policy or institutional decisions and household level activities.

Appendix – 2

Trend line of Marine Fish Catches Chittagong Coast



Source: PRA Exercise with fishermen in Latifpur village in July 2001;

Cause of fish stock decline:

- Fry & Juvenile catch
- Accretion of land under the sea
- Disposal of fertilizer factory
- Garbage from the city (Polythene)
- Disposal of ship breaking industry
- Increased number of boats
- Throwing of trash-fish in the sea bed by the big commercial trawlers
- Use of current net
- Use of insecticides & chemicals in land
- Disposal from Gas
- Explosion in the sea by army

INSTITUTIONAL ISSUES & CREDIT: THE NGO EXPERIENCE IN COASTAL COMMUNITIES FROM CODEC'S PERSPECTIVE

Khursid Alam Ph.D, Executive Director, CODEC

Introduction

The following provide an overview of CODEC regarding Institutional Issues and Credit among the coastal communities in Bangladesh. CODEC is working among 650 coastal & riverine villages in Chittagong, Laxmipur, Noakhali, Patuakhali, Barguna & Bagerhat districts. Moreover CODEC is also working in 200 villages with Aquaculture Extension Program in Laxmipur, Noakhali, Patuakhali & Barguna districts along with GoB (Department of Fisheries, Ministry of Fisheries & Livestock) and Danida.

CODEC is working among the coastal communities mainly in Institution Building and financing in Productive Purposes along with Policy Advocacy, Education, Training and Health related issues (Sanitation, Drinking water, ORS, Health education etc.)

Institutional Issues

" Poor governance and weak institutions are the most important development constraints" (Bangladesh: Country Strategy Paper, DFID, 1998)

The Local Government as a political institution to ensure public participation in development activities is yet to take proper shape in Bangladesh.

" Most administrative decisions still remain to be taken centrally.... Several attempts have been made at decentralization, but the system has remained highly centralized. As of such local bodies are characterized by weak administrative capacity, a limited financial and human resource base and little public participation." (Ahmed S.G. 1997: Local Government System in Bangladesh, Empowerment, Participation in Bangladesh: University of Dhaka)

In the context of the coastal communities it should be understood that poor representation of the coastal communities in the power structure do not allow them to reflect their problem and issues in the main stream. The Union Parishad is the only place where the community may raise their issues and in most of the cases the Union Parishad do not have enough power or resources to address or serve the people's requirement. Union Parishad is primarily involved in distribution wheat against Food For Works.

Though Union Parishad can play a vital role for the development of their respective areas and people, but that requires proper structural adjustments and also requires a decentralized authority to the Parishad.

Thus the formal institutions are not functioning properly or in most cases those are ornamental. In this context the formation of non-formal institutions arises. Most of the NGOs are engaged in forming such in-formal institution in different forms and dimensions. CODEC, thus, in all its command villages formed Village Organizations (VOs) for male, female and children. The Male and Female organizations also formed Apex Organization called Coordination Committee comprising representations from 60-80 Village Organizations in each field level CODEC Branch. Through these Coordination Committee CODEC is trying to activate some of the very important institutional issues, which are in most cases linked with their political and social rights. Through policy Advocacy campaign these Coordination Committees are trying to raise their voices at different levels.

The long –term aim of CODEC is to see that Coordination committees are organized themselves into the decision making process at least at Union Parishad. By building the platform of empowerment, it is anticipated that the institution will be able to act as a successful pressure group for their communities and members in the local socio-political context. At least by Policy Advocacy these institutions will be able to raise their voices-if not to the central level but to the local levels (Union & Upozilla)

Coordination Committees need to have legal status under the government regulation. It will uplift its empowerment through legal reorganization and status. The legal status will accelerate the capacity of the Coordination Committee to address greater issues of their communities and create opportunities for linkage and network with related government and non-government agencies.

Those Coordination Committees are also facing legal problems. To be registered as formal institutions, the prevailing laws in Bangladesh are not favorable to their needs and causes. All these laws are regulatory in nature and not aimed at assisting these grass-root level organizations to grow up or to work towards their socio-political and economic development. It is also to be understood that if the Government does not have a clear agenda regarding these non-formal organizations, it is difficult, or in most cases not possible, to reach the ultimate goal of building sustainable institutions for the disadvantaged poor of the coastal area of Bangladesh. Policy Advocacy may play a pivotal role to address these issues.

The experience of CODEC dictates that, to establish bask institutions of the grass-root level, the village organizations also require to practice democracy and transparency at primary member's level. The external factors in most cases hamper such practice. It is understood that the overall situation of the state necessarily imposes the pre-conditions for such situation.

Key Research Findings form our present Research Project

- Weak local governance due to lack of clear policies and inadequate autonomy of local government.

- Inadequate government extension services related to fisheries, health, agriculture etc.

- Government policies are characterized by:

    - Inadequate addressing of poverty

    - Poor implementation

    - Coastal areas have weak representation at Central level.

Credit (Micro-Finance)

Fishing Communities in Bangladesh

Before going to explain the CODEC experience in the field of Micro-credit and other loan products, let me portray the situation of the coastal fishing communities in Bangladesh.

Traditionally, it was the low caste Hindus who engaged in the fishing profession. The Hindu society is still a caste-bound society and low castes are made up of people destined to take up manual labor-based professions. The Hindu fisherfolk are one of such caste-bound communities. The population increase together with the increasing landlessness caused by erosion and nagging poverty has changed the structure of the agriculture sector and thereby also the small-scale fisheries sector. The arable land has been divided into smaller and smaller units, often so small that they cannot support the family. Fishing has then become the alternative source of employment, part time or full time. Small-scale fishery is seen as a last resort to earn one's livelihood. Thus, the increasing number of new comers in the artisanal fishing sector are making the traditional Hindu fishing communities more vulnerable.

On the other hand, the coastal & riverine communities are facing serious consequences. For many reasons landlessness along with declining fish resources from open water bodies, in many cases compel the population to migrate to big cities, because the employment opportunities in the coastal region are very slim.

Moreover, the industrialization (in a very limited way) is going on mostly in the big cities. As such the job opportunities in the small towns, in the vicinity of the coastal and

riverine areas are also very limited. On the other hand every day about 20,000 youths are entering into the job market from the region.

" Most of the hundreds of MFIs that are providing micro finance services to the poor around the world are non-government organizations (NGOs), usually societies, trusts or foundations. They tend to have added micro finance to their earlier development oriented activities when they saw the need of their members for capital. However, strictly speaking, either the statutes do not usually permit micro finance services neither under which they are registered or the regulatory authority for financial institutions in their country, especially if the NGOs are accepting savings deposits from their clients. Yet without the micro finance activities of these small NGOs, mostly very poor households would not have access to capital for additional income-generation through self-employment." (Financing Micro finance for Poverty Reduction: David S.Gibbons and Jennifer W. Meehan, 20 March 2002)

In Bangladesh, NGOs are also facing this critical problem, though GoB for the last few years are discussing this issue and promised that some laws will be passed in the parliament to give a legal status to all NGOs which are actively operating Micro-Finance activities in the country.

Further, a major problem in micro finance is that the model is giving emphasis on quantity rather than quality. We definitely understood that quality of life cannot be ensured only by economic upliftment, the precondition of the quality of life is dependent on the socio-political environment of the state. Further the model does not have any exit plan with the borrowers and the respective NGOs are somehow involved in a chain of patron-client relationship. Micro-credit starts with Tk.3000 to Tk.5000 to each member without any proper scrutiny. Each year the amount increases gradually. Whether the amount is used for consumption or properly used for production purposes - the scope of this evaluation is not existent in most of the cases. In many cases the members are going to be indebted to a bigger amount as the time passes. The NGOs also do not have any option but to continue the loan program with each of the loanee members to keep the record in good shape. Thus, the repayment rate does not necessarily indicate the impact of the credit program. Neither the borrowers nor the respective NGOs are able to find a way of phase-out from this relationship.

CODEC initially started its credit program by distributing mechanized fishing boats and gradually became involved both in Micro-credit as well as Mid-Term and Long-Term financing against income generating activities. CODEC also provided loans against housing in limited capacity. In some very specific cases CODEC provided loans without interest; and under a very special project CODEC provided credit to the fishers to free them from dadan. From January, 2002 CODEC also initiated a credit program for Hard Core poor and for the well-off members of the village communities. It is too early to make comments on these two initiatives.

Micro-credit somehow helps the poor population to have less dependency on moneylenders and Dadandars but total elimination of exploitative money lending and

Dadan transaction is not possible through Micro-credit. Mainly because, micro-credit definitely requires some procedures and rules, which do not allow members to borrow money whenever they require money badly. On the other hand, moneylenders and Dadandars do often have disbursable money without following any rules and procedures.

Moreover, the very rules, regulations and procedures of the established Micro-credit programmes exclude the very poor (hard-core poor) and gradually it (Micro-credit program) shifts its target groups to the upper strata of the poor population and the middle class.

Sometimes, the repayment schedules are also not feasible to the borrowers as most of the poor people are somehow dependent on the fishing season or availability of work. Even the invested loan money in a profitable project does not secure regular flow of money for repayment in accordance with NGO rules.

Dadan-Free Loan

Nowadays, virtually, the fishers have to depend on the monoculture of *hilsha* fishing in the Bay of Bengal during mid-June to mid-November. The next four months (mid-November – mid-March) they barely earn their livings from the fishing of *Bombay duck* and small shrimps in the coast of the Bay.

But during the following three months (mid-March – mid-June), almost, they don't have any earning source, because the sea cannot support them during the period due to gradual depletion of fish for various obvious reasons and also because of 'reduced catch per unit effort'.

During the above three months (mid-March – mid-June), they either borrow from the usurers at an exorbitant rate of interest or buy their food and other daily necessities from the local shops on credit. In most of the cases, at the outset of the season (May – June) for *hilsha* fishing, they have to take resort to the *dadondar*s for loan. At that time this loan is urgently required for making their fishing gears ready for *hilsha* fishing in the ensuing season. For this fishing season, their investment on one boat ranges from Tk. 100,000 to Tk. 120,000 and they usually avail *dadan* to the extent of Tk. 10,000 to Tk. 70,000 in a season for meeting their fixed and working capital requirements.

It may be pointed out here that the typical usury rate of interest varies from 120% to 240% per annum. On the other hand, *dadon* is a sort of monopsony transaction that is built upon an highly skewed lending contract in favour of the lender to sell the produce (here the catches) to him/her at a price much lower than that of the normal market (usually at less than 20% - 40% of the normal market price).

With the abovementioned situation in view, CODEC initiated its Savings & Credit Programme to meet the aforesaid requirement of credit of the poor fisherfolk/coastal communities and to bring them out of the clutches of the informal credit market. But,

despite working over a decade among the fishing communities of Chittagong, CODEC felt that it has not yet succeeded to free most of the fishers from the clutches of the *dadondar*s and usurers. Most of these years CODEC could support them with its micro-credit products of Short Term Loan (STL) for one year with an average loan size of Tk. 10,000 and Mid Term Loan (MTL) for two years with an average loan size of Tk. 30,000.

From the above realisation, during May and June 1997, CODEC introduced another credit product, named ***Dadon*-free Loan** (usury-debt redemption loan), on pilot basis for freeing some of the Chittagong fishers from the clutches of the *dadondar*s and usurers. CODEC extended such loans to 110 members of the CODEC supported VOs (Village Organisations) of its Chittagong Area within a range from Tk. 20,000 to Tk. 70,000 for a period of two years from its own Loan Fund under the following terms and conditions:

- The amount of *dadon* and/or usury loan of the referred borrowers would have to be repaid to the respective lender(s) immediately after loan disbursement in presence of at least two appropriate representatives from the concerned Loan Committee and the concerned Centre/Branch and they should submit a certificate in this respect. Such repayments must also be acknowledged by the respective lender(s), and the concerned borrowers should be declared free of any *dadon* and/or usury loan. The respective borrowers should also ascertain that they would not resort to *dadon* and usury loan at least during the tenure of CODEC loan.

- To get rid of further *dadon* and/or usury loan, the proposed MTLs (Mid Term Loans) can be disbursed without Security Deposit in cash. But, in terms of proposal of the concerned organisations, the MTLs should be made secured with mortgage of the borrowers' movable and immovable properties as described in the said borrowers' profiles.

The program was aimed to cover 450 fishers, which is about 10% of the total fishers covered under Chittagong Area of CODEC.

The experience of "Dadan-Free loan" is as follows;

The "Dadan Free Loan" gives the option to the fishers to sell their catches by their won, have the opportunity to bargain and thus, allow them to receive higher prices. But for their very urgent need (e.g. loss of fishing gears and catches in the sea due to piracy) in few cases, they had to borrow money from the dadandar again. In some instances they just for social security take money from Dadandar, which is not possible to ensure by any organization. Moreover the Dadan Free Loan was provided to the minority Hindu Community in Chittagong area, where every day they are facing the severe problem of piracy and losing their fishing nets, engines and fishes. This piracy which is increasing every day in the fishing ground is also a severe blow for the fishers to repay the big loans.

Micro –credit may be an option to those people for survival; but in many cases, difficult to self-sustain. In most cases, micro credit is used in non-productive purposes or in

consumption. On the other hand, many NGOs are operating in the same region, which is creating an unhealthy competition among the NGOs. As a result, the members of the rural populations are taking advantage from the situation. Ultimately they are going to be more indebted day by day. In a recent CODEC study it was pointed out that one of the reasons of migration from rural areas to urban cities is due to indebtedness to different NGOs. As the same group members are taking loans from different NGOs, in most of the cases the money is used for non-productive or consumption purposes which do not allow them to repay the loan as per schedule. Day by day the burden is becoming heavier and the pressure from their fellow members and NGOs worker compel them to flee away from their respective villages.

The result of micro-credit in the coastal & riverine areas is not good for most of the NGOs and even for Grameen Bank. CODEC, somehow from its inception is trying to address some of the problems by introducing different types of loan products. Still, owing to the absence of clear laws and regulations by GoB, most of the time CODEC was compelled to compete with others just to stay in the arena, which hampers to initiate innovation as well as to attain the need of the coastal & riverine populations.

Loan Status of CODEC

The details of the loan status of CODEC as at June 2002 are enclosed in Appendix-A. The summary is as follows:

Total Loanees:	137,305
Total Savings:	Tk.59, 946,451
Total Outstanding:	Tk.143, 418,966
% Of recovery rate:	93%

Studies on the Impact of Savings and Credit Programme (Micro Finance) of CODEC (Community Development Centre), conducted in some part of its command area, put forward the following findings:

- On the whole, the Savings and Credit Program of CODEC brought positive impact upon the lives of its target people. Most of them have not only succeeded in arresting deterioration of their economic situation. Rather they have achieved their household economic security and some of them even attained vertical mobility (upward) in terms of their asset acquisition and income-expenditure pattern.

- Positive impact has also been visualized in terms of their (the borrowers') food-intake, clothing and housing. Compared to their early life, i.e. before their association with CODEC, now they can spend more on these basic necessities of life. These have been possible due to their enhanced income through the "Savings and Credit" intervention of CODEC.

- Their (the borrowers') loan availability has been smoothened. Nowadays, they don't have to depend much upon the village moneylenders. Incidences of *dadan* have also been reduced to a substantial extent. Compared to other NGOs in the locality, they can borrow higher amount of loan that roughly commensurate their requirements. In terms of loan tenure, their repayment of loan is also high, although they cannot always repay as per repayment schedules due to high seasonality and extreme uncertainty of their income stream.

Despite the above positive impact, the study also pointed out the following weaknesses of the Savings and Credit Programme of CODEC in the referred area:

- Sometimes the borrowers of CLF (CODEC Loan Fund) do not utilize their loan amount properly. Assessment of their loan requirement is not also done properly.

- Although, most of the time, the borrowers repay their loan within the period of the loan (i.e., within loan tenure), they often fail to repay installments in time. Both repayment and realization effort, as per installment, is very weak.

- In some of the cases, the female loans of the VO members go to their male counterparts. There is no wrong in investing the money jointly. But, many women have virtually no control upon utilization and management of their loans. This rests upon their husbands, sons or fathers.

- The seasonal variations and uncertainty of income of the target people adversely affect their IEGAs (Income and Employment Generation Activities). So is the case with loan repayment.

- The target people, as well as the CODEC personnel do not give much impetus on the social development programs of CODEC. They are mostly interested in the economic development program. But, it is to be understood that only income generation is not enough. Arresting the erosion of income is also very important for the overall development of the target people. At least, here lies the importance of social development activities of CODEC.

Let us put forward some more problems of the present state of Micro Finance in the context of the experiences of CODEC:

- The income of our target people is totally dependent upon the seasonality of their profession and it is characterized by a very high degree of uncertainty. Moreover, their income stream is very irregular and during a substantial period of the year they either suffer from absolute unemployment or disguised unemployment. So, it is very difficult for them to repay their loans regularly as per their respective repayment schedules.

- The target people are virtually dependent upon fishing in the estuaries of the nearby rivers and the Bay of Bengal. But, day-by-day, they are facing "reduced catch per unit effort" due to increasing pressure on this resource. On the contrary, there is very scanty scope for alternative income and employment generation opportunities for them. As a result they fail to repay their loans regularly.

- Our target people are living in the severe disaster prone areas of Bangladesh. Almost every year, they face natural calamities like cyclones and floods, which seriously jeopardize their income and living. These factors count down upon their repayment of loans.

- The target people are also the helpless preys of piracies in their fishing grounds. They also face theft and epidemic of their cattle and poultry. This situation also counts down upon their income and repayment of loans.

- Our command areas are virtually outreached for everybody. So, the cost of operation of our Savings and Credit Programme is quite high.

- The increasing pressure on attaining and keeping financial self-sufficiency of the programme, and sustainability of the organization as a whole, systematically excludes the "poorest of the poor" from the umbrella of the Micro Finance Programme for its obvious reasons.

- Our target people often need emergency loans, both for consumption purpose (food and clothing requirements during lean season, marriage of daughters & sons, house repairing, medical treatment etc.) and working capital financing for loss of assets (due to piracy, theft, epidemic of cattle & poultry etc.) during the tenure of an ongoing loan.

  Since they are not allowed to multiple loans, they have to resort to the traditional moneylenders and/or *dadandars* to meet their emergency need of finance. This seriously counts down upon their loan (CODEC) repayment.

- Sometimes due to lack of proper management ability, some borrowers are provided with loans larger than their actual requirement for their respective IEGAs (Income and Employment Generation Activities). So, a portion of the loan amount goes to feed their consumption needs.

  Later on, they often fail to repay their loans in time. In some cases, they repay the CODEC loans by borrowing from the usury sources at high prices. This seriously endangers their sustainability. Even, in some cases, if they are under severe pressure from the debt collectors, sometimes they migrate to the big cities to seek opportunities for income.

- Now, in consideration of financial self-sufficiency of the programme and sustainability of the organization as a whole, there is an increasing trend/demand

to include the people in the programme, who are not considered as target people of CODEC.

- The management requirements of micro finance can undermine relationships and capacity to engage social mobilization. It is difficult for the same person to be both 'social mobilizer' and debt collector. The disciplines and practices of the one are at odds with the other. Micro finance is concerned with economic empowerment of an individual; while the social mobilization Programme deals with the group and its socio-political development.

- The default of loan repayment seriously endangers group cohesion and its social development activities.

Key Research Findings

- The hardcore poor (estimated 20% of coastal population) do not have excess to formal or informal credit.
- Micro-finance scheme often is not appropriate for coastal communities.
- High opportunity cost of capital in informal sector (e.g. 5-10% per month interest in informal sector; this is also reflected in Dadan transactions between traders and fishermen who do not have access to formal credit).
- Even large-scale operators in the community chain (e.g.Aratdars) do not have easy access to bank credits due to unfriendly procedures, collateral arrangements etc.

References:

Alam, Khursid(1996): Two Fishing Villages of Bangladesh: A Community Study

Alam, Khursid; Dastidar, Ranajit; Reza, Syed Farhad Ali (1998) : Pain & Pleasure of the Fishing Communities Around the River Meghna

Ahmed S.G. (1997): Local Government System in Bangladesh, Empowerment, Participation in Bangladesh: University of Dhaka)

Bangladesh Bureau of Statistics (BBS) (1998):Statistical Year Book of Bangladesh

CODEC Credit Report (2002): Credit Department of CODEC

DFID, 1998:Bangladesh: Country Strategy Paper,

Talukder, Shahid Hossain (2001) : Review Study on Impact of Savings & Credit Programme of CODEC.

MARKETING OF MARINE FISH – RESULTS OF RAPID MARKET APPRAISAL EXERCISES

Ulrich Kleih[1], and Utpal Dutta[2]

Background

The project "Fish Distribution from Coastal Communities – Market and Credit Access Issues" started in February 2001 with funding from the UK Department for International Development (DFID). The main collaborators include the Natural Resources Institute (NRI, University of Greenwich), the NGO Community Development Centre (CODEC), and the University of Chittagong (UoC) Marketing and Sociology Departments. Activities carried out by NRI and CODEC were funded by the DFID Post-Harvest Fisheries Research Programme, and the activities undertaken by UoC were funded by the DFID Support for University Fisheries Education and Research project.

The objectives of the study included the following:

- Analysis of the marine fish marketing system,
- Analysis of access to credit for poor fishermen and traders, and
- Analysis of the institutional, social, cultural and political context in coastal fishing villages.

A combination of a livelihoods approach and traditional marketing economics based on sub-sector analysis were used in investigating these topics. CODEC and NRI focused on data collection based on Participatory Rural Appraisal and Rapid Market Assessment, whereas the University of Chittagong undertook a quantitative survey based on questionnaires.

The survey activities took place in July – September 2001, January – February 2002, and April 2002. A stakeholder workshop was organised in March 2001 at the beginning of the project.

This paper primarily presents the findings of rapid market assessments of the marine fish distribution system, including some elements of the relationship between marketing and credit. Given that fresh fish and dried fish follow separate distribution channels, it has been felt appropriate to analyse the two marketing systems separately.

Although some information has also been collected on shrimp, the focus of this study is on marine fin-fish species. This is in view of other studies recently carried out on the shrimp sector in Bangladesh.

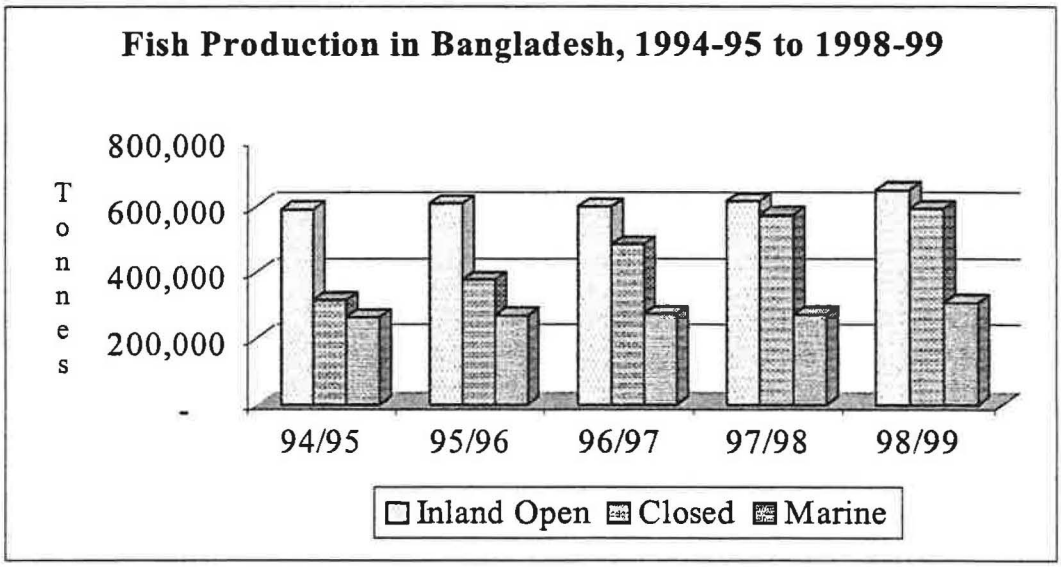
[1] Natural Resources Institute, University of Greenwich
[2] Community Development Centre, Chittagong

Supply and Demand of Marine Fish

The Supply Situation

According to figures of the Department of Fisheries, the total catch of marine fish has increased from 265,000 tonnes in 1994/95 to 310,000 tonnes in 1998/99 (17% increase). Compared to this, during the same period, the catch of fish in inland open water has increased from 591,000 tonnes to 649,000 tonnes (10% increase), whereas the production of fish from closed water bodies went up from 317,000 tonnes to 593,000 tonnes (87% increase). Figure 1 illustrates the increase of fish production according to the Department of Fisheries.

Figure 1



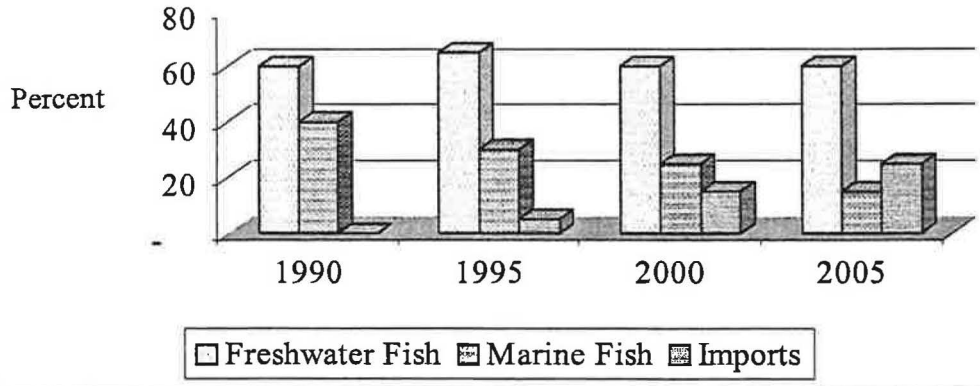
Source: Brief on Department of Fisheries (July 2000)

The above information contradicts to some extent the information obtained during the course of participatory and rapid survey exercises with fisherfolk and traders. For example, the majority of fishermen interviewed in coastal communities have stated that marine fish catches are declining since the early 1990s. Before that date (i.e. mid-1970s – 1990), catches substantially increased mainly due to the use of improved gear such as engine boats and better performing nets. At the same time, fishermen acknowledge that the decline of catches during the last decade is not linear, since there are years when the catch is better than in the previous year (e.g. the *hilsha* catch was better in 2001 than in 2000). Nevertheless, the vast majority of them agree that the overall supply trend for marine fish is negative. Mr Rana Dastidar of CODEC will provide more information on this aspect in his paper on livelihoods in coastal fishing communities.

Sometimes it is argued that it is only the catch per unit which is declining but not the overall catch. Following this argument, markets would be well supplied by marine fish. On the other hand, the majority of traders specialised in marine fish equally complain about declining supplies (e.g. Chittagong, Dhaka, and Patuakhali). This overall picture can best be illustrated by using the estimates provided by Dhaka

aratdars. According to them, the proportion of marine fish supply from Bangladesh is gradually being replaced by freshwater fish and imports.

Fig. 2: Fish Supply according to Dhaka Traders



Source: CODEC / NRI, Trade Survey, January 2002
NB. Figures are estimates

According to these traders, the supply of freshwater fish remains at about 60%, however, and the share of the marine fish is gradually being replaced by imports. They estimate that the imports represented about 15% in 2000 but expect them to rise to 25% by 2005. As for the supply of marine fish they predict a drop to 15% by 2005. The majority of both fresh and dried fish traders in other major markets have drawn a similar picture, underlining the decline of catches of major marine fish species such as hilsha, and growing fish imports mainly from India and Myanmar. It should be noted that although the figures provided in the graph represent proportions, according to the traders the marine fish supply is also declining in terms of quantity.

As for the proportion of marine fish caught by the artisanal sector, this is estimated to be of the order of 95% (i.e. 257,000 tonnes out of 272,000 tonnes in 1998, Source: Statistical Year Books, DoF/BFRSS 1997-98, quoted in Rahman et al). The remaining 5% are estimated to be caught by the industrial sector. However, in the light of the above statements by traders and fishermen in coastal communities it is doubtful that this ratio still prevails. According to sources in the industrial marine fisheries sector (i.e. 84 trawlers in 2001)[3], their catches are increasing. They claim that deep-sea shrimp is primarily caught for export and a proportion of white fish is sold on the domestic market (i.e. trash fish is not thrown overboard). Some trawlers target white fish and others shrimp.

Despite this somewhat contradicting picture, overall there are indications that the share of the marine fish caught by industrial trawlers is increasing whereas the catch caught by the small-scale sector (i.e. small motorised and non-motorised engine boats) is decreasing. As a consequence, it can be assumed that the share of fish caught by industrial trawlers is well above 5% of the total marine catches.

[3] This includes, 42 shrimp trawlers, 29 whitefish trawlers, and 13 so-called "High Court Boats" (i.e. trawlers from neighbouring countries which were impounded by the Navy and then auctioned). Source: Trade survey in 2001.

Demand

Needless to repeat that together with rice, fish is the main staple food in Bangladeshi households. According to DoF figures the per capita fish intake in Bangladesh is 11.9kg (DoF, 2000). This contrasts with the per capita fish intake needed per annum, which is at 18.0kg. These figures highlight a 34% shortfall corresponding to 790,000 tonnes between supply and demand of fish.[4]

This gap between supply and demand explains the relatively high prices of fish compared to the level of income of average wage earners. This, in turn, is reflected in the reactions of the public. For example, Rahman et al (2001) have collated a series of newspaper headlines highlighting the scarcity and high price of marine fish such as hilsha. Nowadays, higher value fish such as hilsha, and pomfret, can only be afforded by wealthier consumer segments. Lower income groups depend on cheaper fish such as bombay duck, and increasingly fresh water fish such as tilapia and rui.

As for dried fish, according to traders this is primarily sold to the following consumer groups:

- Poor people;
- Rural people throughout the country;
- Population of North Bengal; and
- To a substantial extent, population of Chittagong and Chittagong Hill Tracts (CHT).

It appears that poor population groups continue to consume dried fish despite its increasing prices but in smaller quantities, which are still considered sufficient to give the food its flavour. It was also reported that more dried fish is consumed during the winter and monsoon.

There is also a demand for fish by Bangladeshis living outside the country (e.g. UK, USA, Middle East). They demand good quality dried or fresh fish (e.g. dried ribbon fish, fresh hilsha). This is in addition to the major seafood exports, which consist primarily of shrimps (i.e. 28,514 tonnes in 1999-2000, worth Taka 16,122 million, DoF 2000).

Export of fish also takes place to other countries in Asia such as India. For example, The Bangladesh Observer (16 July 2002) reports that hilsha worth Taka 10 – 15 crore is exported every year from Chandpur, but that this amount may fall to Taka 5 crore in 2002, due to a shortage of supplies. The equivalent of exported hilsha worth Taka 10 – 15 crore is estimated to be of the order of 500 to 1,000 tonnes. In 1999/2000, the total export of fish products other than shrimp was 10,877 tonnes valued at Taka 1,994 million. (DoF, 2000).

It is very likely that the export of fish influences the price of certain species on the domestic market. For example, good quality/large sized hilsha is high in demand for

[4] Assuming the demand corresponds to the amount of fish needed per capita per annum, according to DoF. This definition of demand does not take into account economic parameters such as price of the commodity, and purchasing power.

export to India, which in turn appears to contribute to its high price for Bangladeshi consumers.

Prices

During the course of the survey it was not possible to obtain price series for the most common fresh and dried fish species in the country. As a result, the survey team has attempted to collect price data between July 2001 and July 2002 in a number of markets for the most common fish species.

It appears that in the long-term, prices of marine fish are increasing in real terms (i.e. net of inflation). Given that it was not possible to obtain price series during the course of the survey, this observation is mainly based on statements made by traders in a number of important fish markets in Bangladesh. As a consequence, as already indicated above, poorer consumer groups rely more on domestically produced and imported freshwater fish (e.g. Rui from Myanmar).

Table 1: Price of fresh fish on 26 July 2001 in Chittagong, Fisheries Ghat

Species	Price
Hilsha, 1st quality	Tk4000/mon of 40kg
Hilsha, large, good size	Tk7000/mon
Hilsha, average quality	Tk3200 – 3400/mon
Hilsha, 2nd quality	Tk3000 / mon
Shrimp	Tk300 - 400 / kg
Pangas	Tk60 - 80 / kg
Noakhali Pangas (big size)	Tk4000 – 5000 / mon
Myanmar Pangas	Tk2000/mon
Indian rui, fresh	T3000 – 3200/mon
Myanmar rui, not so fresh	T2000 – 2400 / mon
Bombay duck	T1200/mon
Shurma	Tk60 / kg
Katamas, big size	Tk2200 / mon
Katamas, small size	Tk 1200 / mon
Chuika	Tk1800 / mon

Source: Traders in Fisheries Ghat

Larger fish fetches a considerably higher price on a per weight basis. For example, large hilsha (1- 2 kg) would fetch a price double than that of a small fish of the same species (e.g. 300 – 600 grammes). As with any perishable commodity, prices fluctuate according to seasonal supply patterns. This includes price increases of dried fish between March – October.

Tables 1 – 4 provide examples of fish price data collected during the survey. For comparison, in the per unit value of exported shrimp was Taka 565 per kg and the value of other fish exported was Taka 183 per kg (DoF, 2000).

Table 2: Price of Fresh Hilsha in Bangladesh, Second half of July 2001

Market	Price of hilsha (Tk/kg)
Latifpur/Silempur, Landing centre	50 - 60
Fisheries Ghat, Chtg	80 – 85
Pahartali market, Chtg	70 – 72
Pahartali retail market, Chtg	100 – 110
Dhaka, wholesale	90 - 100
Dhaka, retail	120
Sylhet wholesale market	100
Mymensingh wholesale market	100

NB: The prices are for small to medium size hilsha (i.e. 300 – 600 grammes)
Source: Fish Traders in Chittagong

Table 3: Prices of Dried Loyitta (i.e. Bombay Duck) in January 2002

Markets	Price of Loyitta (Tk/kg)
Asad Gunj Wholesale Market, Chittagong	75 – 80
Kawran Bazar, Wholesale Market, Dhaka	85 – 90
Retail Markets in Dhaka	100 - 120

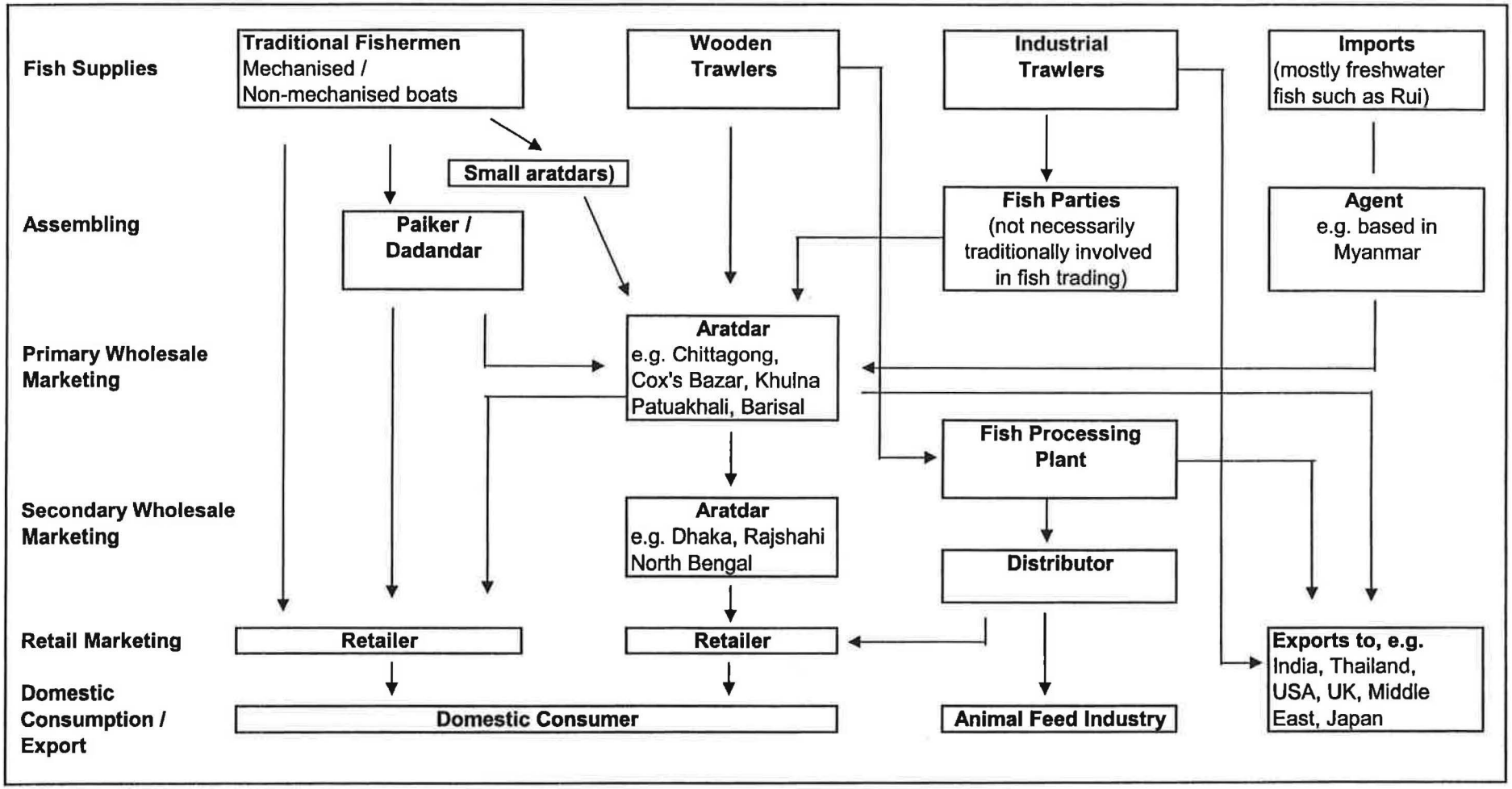
Source: Dried Fish Traders in Dhaka, January 2002

Table 4: Dried Fish Prices Paid to Kuakota Processors by Traders in Chittagong (Tk/kg)

Species	Nov. 2001	January 2002	April 2002 (expected)
Bombay duck	65 – 70	75 – 80	80 – 90, upto 100
Shark	65 – 70	72 – 90	55 – 60
Chapla pata	28 – 32	48 – 55	30 – 32
Suna bain	50 – 55	60 - 65	75 – 80

Source: Fish processors in Kuakota, January 2002

Figure 3: Commodity Chain of Fresh Marine Fish



Market Operators – Their roles and Constraints (fresh fish)

Fishermen

This section will only highlight some of the key characteristics of fishermen as part of the marketing chain. More details on fishing communities can be found in the presentation of the results of "How Sustainable are Livelihoods in the Coastal Fishing Communities – Findings from a Participatory Rural Appraisal".

Several categories of fishermen and fish catching enterprises have been encountered during the course of the survey, namely:

- Fishermen who work in other people's boats,
- Owners of small motorised and non-motorised boats,
- Owners of wooden trawlers (i.e. Danish boats),
- Industrial trawler companies.

Fishermen who work in other people's boats tend to have an arrangement with the boat owner regarding the share of the catch. Usually, it is the owner of the boat (i.e. Bahaddar) who obtains the biggest portion of the catch (i.e. about 50 - 60%), whilst the crew obtains the remainder. Nevertheless, there are also cases where crew members belong to the wider family of the boat owner and are paid a small salary (Tk50 – 100 per day) plus meals for their work (e.g. Latifpur / Silempur). In this case, the boat owner (bahaddar), who may not necessarily join the fishing crew in the sea, will sell the entire catch himself and keep the sales proceedings.

Part of the income of commercial trawler workers tends to be based on a fixed salary, and part of it is based on a bonus depending on the amount of fish caught. The bonus is calculated using an agreed formula.

Fishermen in smaller boats tend to sell their catch at sea to collector boats or they sell it at the landing centres. Traditionally, they rely on informal sources of credit for their fishing operations. This can involve the purchase of boats and other gear such as nets, plus working capital for fuel, food for the crew etc.

The dadondar (i.e. fish trader cum money-lender) is the traditional source of credit for fishermen as regards their fishing operations. The amount of dadan involved in these operations tends to reflect the resources of fishing communities and gear used. On the other hand the credit conditions can vary from location to location. Traditionally, a dadan taker (i.e. borrower) would be obliged to surrender his fish to the dadondar (i.e. money-lender cum paiker) at a price which is considerably below the market price (i.e. 20 – 40%). The outstanding principal would often be used to tie the borrower to the dadondar over a longer period of time, which may result in further indebtedness. However, these credit arrangements tend to vary, and new forms are beginning to emerge. For example, there are so-called "new" dadondars in the Latifpur – Kumira area, which charge 20% of market transactions. They are not fish traders, but money-lenders who may have acquired their capital in other types of business (e.g. poultry production). Also, fishermen who own larger boats may be able to deal directly with aratdars, thereby by-passing paikers. This benefits both boat-owners and aratdars as

one level of intermediary can be cut out. Table 1 provides examples of dadan in relation to location and gear used.

Table 5: Dadan Arrangements in Fresh Fish Chain According to Location

Location and Type of Fishing	Type of Gear Used	Amount of Loan	Repayment Arrangement
Lebukhali, Patuakhali District Riverine Fishing	Dingi boats, 3 – 4 crew	Tk 1,000 – 5,000 for three/four people	10% Commission per sale, which has to go through aratdars
Kuakata – Panjupara, Patuakhali District Coastal Fishing	Non-motorised boat, 12 nets, 6 crew	Tk 10,000 – 20,000, for crew of six	5% Commission to small aratdars based at Kuakatta Ghat
Latifpur, Silempur, Kumira Chittagong District Coastal Fishing	Mechanised boats, 5 – 6 crew, 12 – 20hp	Tk30,000 – 70,000	Fish has to be sold to dadondar (i.e. paiker cum money lender) who pays a price which is 20 – 40% below market rate; In addition, there are "new" dadondars who charge fixed rate of 20% per sales transaction.
Hatkholapara Cox's Bazar District Coastal Fishing	Mechanised boats, up to 20 crew, 40 – 70hp, Gillnet, MSB net, or Longline	Tk10,000 – 30,000 for smaller boats, and up to Tk100,000 for wooden trawlers (i.e. "Danish Boats")	Fishermen have to sell to dadondar (i.e. paiker cum moneylender), who pays 10 – 20% below market price.

Constraints typically expressed by small-scale fishermen:

- Piracy, i.e. theft of boats, nets, and engines,
- Depletion of fish,
- Lack of capital, which forces people to take out dadan,
- In the Chittagong area, army practices (which prevents them from fishing), and ship breaking yards, which can cause destruction of nets.

Paikers

Paikers are a form of intermediary traders who can have several functions. On the one hand, they can play the role of assemblers at the landing centres (primary markets), on the other hand, they can be wholesalers who trade the commodity between secondary and higher secondary markets (i.e. wholesale markets) of the country.

In general, paikers are tied to a limited number of aratdars who provide them with loans for their working capital. The total amount of working capital per paiker is in

the range of Tk10,000 – Tk100,000 depending on the business acumen of the individual. If they have dadan from an aratdar then they have to sell/buy their fish through/from him, using him as a commission agent who usually gets 3-6% commission for his services and costs involved. Part of the commission (i.e. up to 3%) may represent an informal form of interest charged by the aratdar.

No attempts have been made here to provide a detailed account of regional variations of middlemen categories such as dalal (local broker at landing site), faria (mobile assembler) or beparies (i.e. distributors at secondary wholesale markets). For more details, the following literature is recommended: Dastidar (2001), Hussain et al (1995), and Coulter and Disney (1987).

Typical constraints expressed by paikers include the following:

- Lack of capital, and lack of access to "easy" credit,
- Decline in fish supply,
- Piracy. This affects them if the fishermen who they provided with dadan lose their boat and gear, and it also affects them if they are boat owners themselves,
- Lack of security at landing centres, and insufficient legal protection,
- Lack of infrastructure (e.g. lack of connection between landing centre and road),
- In more remote locations, lack of ice plants and cold storage close to the landing site.

Aratdars

Given their central position in the wholesale markets, **aratdars** play a leading role in the fish marketing system of Bangladesh. They can play several brokerage functions at the same time. This includes commission agent whereby they obtain a percentage fee of the auctioning price (i.e. normally 3 – 6 %, in the case of fresh fish marketing), or wholesaler whereby they become the buyer and seller of the commodity. In some instances, part of the commission fee is also seen as an interest on dadan which they advanced to intermediary traders (i.e. paikers).

Table 6: Number of Fresh Fish Aratdars in Selected Cities

City	Number of Aratdars
Chittagong (out of which Fisheries Ghat)	120 (72)
Dhaka (out of which Kawran Bazar)	700 (about 170)
Patuakhali (out of which Mach Ghat)	30 (16)

Although the total number of aratdars may be used as an indicator of competition in the fisheries wholesale markets, it ought to be remembered that there are important differences as far as their endowment with working capital is concerned. One lakh Taka (i.e. Tk100,000) is the very minimum amount of working capital required to become a small aratdar. Big aratdars who are based in major wholesale markets are estimated to have a working capital of up to Tk10 crore, reflecting their substantial

market power. For example, there are only about 6 out of 72 aratdars that dominate the Fisheries Ghat in Chittagong.

According to aratdars, major changes in the fish marketing system, include the following:

- Improved road transport;
- Better availability of ice;
- Better communication through the use of mobile phones;
- Lending skills of aratdars have improved (i.e. they now study the feasibility of a project if someone requests a loan).

In comparison, the following main problems were stated by aratdars in different locations:

- Pirates, who also attack bigger boats. According to them, this is getting worse due to "professional dacoits"; they are expecting the Coast Guard to establish security;
- Declining fish supplies, resulting in "lost business", especially between 1998 and 2000, (2001 was somewhat better);
- Lack of financial support through project loans at preferential interest rates;
- Lack of institutional support, such as better market infrastructure or advice;
- Road access to markets is often too narrow, markets lack shelter, etc.
- In some places, lack of ice factory and public cold storage.

High levels of competition, and collusion can co-exist at the same time in fisheries wholesale markets. Competition is likely to be highest when there is a shortage of supply. On the other hand, price fixing may take place when there is a glut of fish arriving in a market. Also, trader societies tend to be closely knit. Entry into business may be easy for newcomers in theory, but fraught with obstacles in reality. For example, "good relationships" are usually required to gain access to an arat that becomes empty. In other cases, aratdars have admitted that they would try to boycott the business of a newcomer by "poaching" his paikers.

At the same time, due to their endowment with assets (i.e. financial and otherwise), innovations in the marketing chain are most likely to be initiated by aratdars. This can be an initiative for up-grading a wholesale market (e.g. new cement flooring to improve sanitary conditions as could be observed in Chittagong Fisheries Ghat), or the exploration of new export markets.

As for the role of women at this level in the marketing chain, only one female aratdar was encountered in Dhaka during the course of the survey. Here personal circumstances (i.e. death of her husband who was a bus driver) forced her in the 1980s to seek employment. Gradually, she managed to enter the fish aratdar business using her husband's insurance pay-out as a starting point.

Retailers

Two main categories of fish retailers have been encountered during the course of the study, namely, market based retailers, and itinerant fish vendors. The number of fish retailers can be substantial in the major urban areas. For example, 5000 – 7000 retailers are estimated to be plying their trade in Dhaka (Source: Aratdars in Dhaka).

Compared to this CODEC (1994) estimated the number of fish vendors in Chittagong at about 2000.

The variation in size of working capital amongst retailers who are based in urban fish markets can be considerable (i.e. Tk2,000 – 30,000). The daily turnover of a stationary retailer can be of the order of Tk1,000 – 15,000, yielding a net income of Tk200 – 3,000 per day. Their costs include expenses such as rent of market place, fees, ice, electricity, transport, labour, etc. Their complaints include:

- Lack of infrastructure, i.e. drainage, roofing, handling facilities;
- Poor accessibility of market, i.e. higher income consumers cannot access the market by car due to road congestion;
- Lack of working capital; e.g. they can obtain fish on credit if it is purchased from a local aratdar, but they have to pay cash if they want to procure fish from another market.

Itinerant retailers (i.e. vendors, hawkers) are likely to earn a daily income of the order of 50 – 200 Taka, which is based on a turnover of up to Tk1,000. Their costs include mostly transport, ice, and packaging.

According to CODEC (1994), constraints expressed by fish vendors, include the following:

- Lack of capital,
- Spoilage of fish / reduction of value,
- Lack of van,
- Hijacking/civic disorder/disturbance by police and hooligans,
- Exploitation by middlemen, incl. aratdars,
- Lack of permanent sales spot.

In particular, at retailer level, there is the "conflict" of marketing efficiency and equitability. Due to their small amounts of fish traded, especially the vendors require a higher proportion of their marketing margin as income. On the other hand, the vendors' relatively high share of the marketing margin will ultimately have to be borne by consumers who often also belong to lower income groups. At the same time it needs to be borne in mind that a large number of livelihoods depend on fish retailing.

Although women do not play a very prominent role in the marine fish distribution system, they are most likely to be encountered at the retailer level. Despite their relatively small numbers compared to their male colleagues (i.e. not more than 10% - 20% of the total number of retailers), fish retailing provides an important employment for women who are often in vulnerable situations. In particular, poor women can be found near fish markets where they trade in small quantities of fish or where they beg for small amounts of low-quality fish from other traders.

Also, women traders can be found in coastal Hindu communities (e.g. close to Chittagong) where they act as local vendors selling fish from door to door. In addition, they are involved in grading and sorting of fish.

Bangladesh Fisheries Development Corporation (BFDC)

Amongst other things, the BFDC, which was established in 1964, includes the following functions: to establish units for preservation, processing, distribution, and marketing of fish and fish products (Hussain, 1995). This involved the building of landing centres and infrastructure related to fish processing and distribution in cities such as Barisal, Chittagong, Cox's Bazar, and Khulna. However, the acceptance of BFDC was mixed. For example, whereas the landing facilities in Khulna are used by fisherfolk and traders, the landing centre in Chittagong - Firinghee Bazaar Bridge Ghat was not well accepted by the traders. Reasons given included:

- The location was not convenient, i.e. there were problems with access for lorries,
- Traders were concerned about disruptions to their business (due to small terminal and insufficient number of paikers),
- Fish trading in Chittagong traditionally takes place at Fisheries Ghat,
- Traders had to pay extra fees / taxes out of their commission (i.e. 20% or 1 Taka of every 5 Takas commission).

Although there was some fish traded at the BFDC terminal in 2001 this appeared to be less than 20% of the quantities traded at the Fisheries Ghat. Most of the trading and office space was not used. The traders encountered at the BFDC facilities appeared to be aratdars and paikers who lack financial strength compared to those operating in Fisheries Ghat. Some of the BFDC traders apparently were not successful in setting up a new business in Fisheries Ghat.

In view of this, it seems important to identify a more sustainable institutional setting for those BFDC facilities which are under-utilised. Relevant solutions should be worked out in collaboration with trader associations.

Ancillary Services

Although reliable statistics do not exist, it can be assumed that the marine fisheries distribution system provides direct and indirect employment for over one hundred thousand people.

In addition to the trader categories described above, this includes workers belonging to industries such as:

- Transport, including countless porters, rickshaw and lorry drivers, boat operators;
- Ice manufacturing and distribution, and cold storage;
- Packaging, including basket makers, etc;
- Money lending;
- Cleaning of markets.

Costs and margins

The main cost elements of traders have been indicated in the above sections. Table 7, which is the result of numerous trader interviews, provides an overview of hilsha traded between Chittagong and Dhaka in July 2001.

It indicates a fishermen's share in the consumer price which is 50%. The total marketing margin, which is also 50%, is sub-divided into:

Assembling:	17%
Wholesale marketing:	22%
Retail marketing:	21%

Compared to these figures, Amed (1983, cited in Hussain 1995) has identified a fishermen's share of 60 – 63% and a middlemen's share of 37 – 40% for marine fish sold in Chittagong and Cox's Bazar.

Table 7: Marketing of Hilsha from a Landing Centre near Chittagong to Dhaka Markets, July 2001

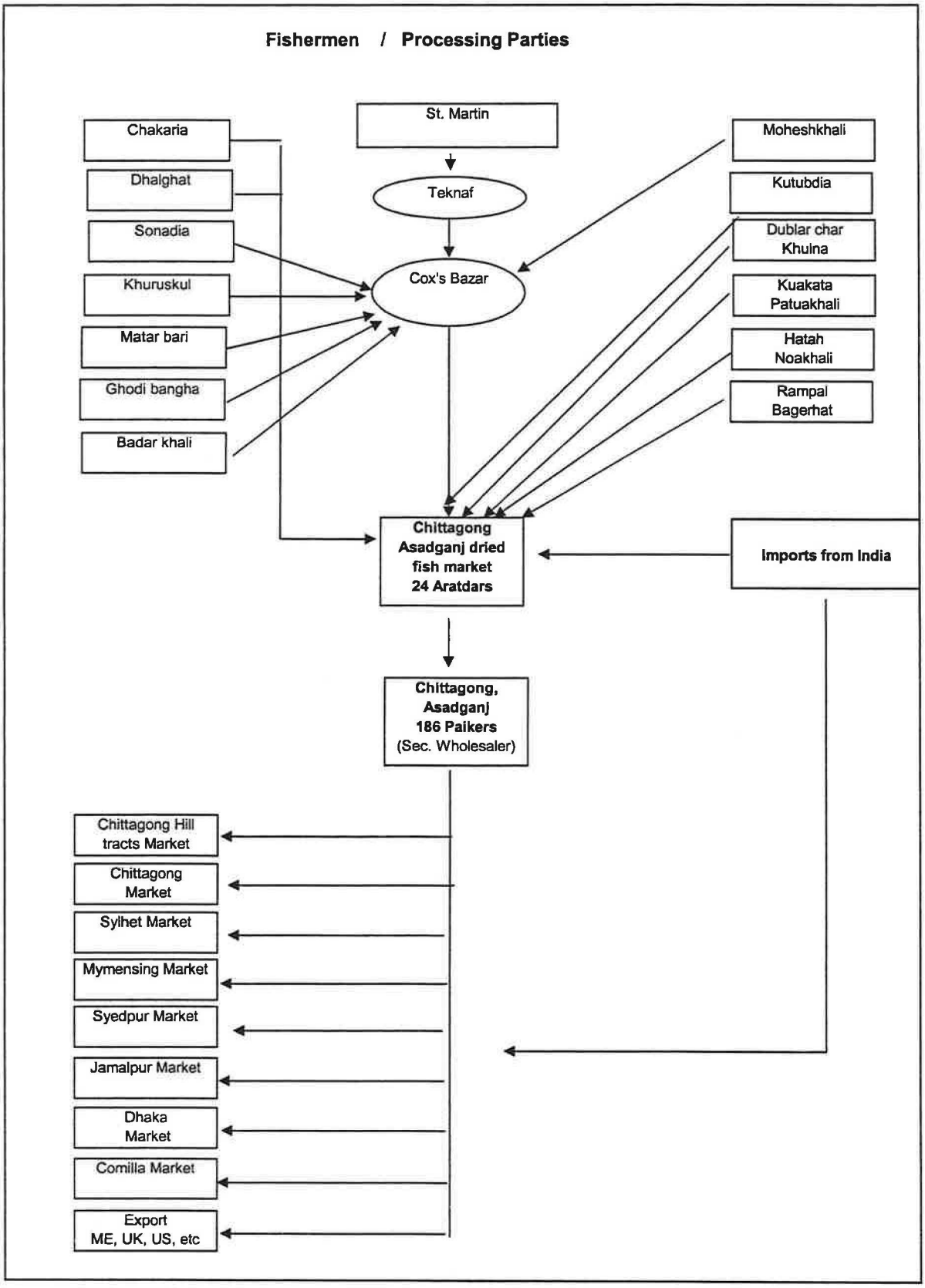
Selling Prices and Marketing Costs	Tk/kg	%
Assembling		
Selling Price: Fisherman to paiker at landing centre	60.00	50%
Transport to assembly / wholesale market (by small boat or rickshaw)	1.50	
Ice	1.00	
Labour	2.50	
Packaging	0.25	
Commission (5% of sales; to aratdar)	4.00	
Net income for Chtg paiker	10.75	
Wholesale Marketing		
Selling Price: Chittagong paiker to Dhaka aratdar	80.00	67%
Transport from Chtg to Dhaka, by truck	1.50	
Ice	1.50	
Packaging and handling	1.30	
Miscellaneous	0.50	
Opportunity cost of capital (5% of wk capital)	4.24	
Net income for Dhaka aratdar	5.96	
Retailing		
Selling Price: Dhaka wholesaler to retailer	95.00	79%
Retail marketing costs	13.00	
Net income to Dhaka retailer	12.00	
Selling Price: Dhaka retailer to consumer	120.00	100%

Assumptions:

- No dadan involved between fisherman and paiker; part of commission paid by paiker to aratdar represents interest on loan
- Transport is by truck;
- Prices are for small – to medium sized fish (300 – 600 grammes)

Dried Fish Marketing

Figure 4: Commodity Chain of Dried Marine Fish



Market operators – Their roles and constraints (dried fish)

As illustrated in Figure 4, the main supply areas of dried fish are Cox's Bazar District, and the coastal parts of Bagerhat, Noakhali, Khulna, Patuakhali, and Shatkhira Districts. In particular, fish drying takes place in remote parts which lack transport and supply of ice. Nevertheless, there are also locations which have an established reputation for supply of good quality dried fish and which continue processing despite improved road communication with other parts of the country (e.g. Kuakota). Usually, the fishermen sell the fresh fish to so-called processing parties, which then sell the dried fish to traders in Chittagong. The 24 aratdars, who are based in Asadgunj of Chittagong represent the financial backbone of the dried fish processing industry in Bangladesh. Imports appear to be on the increase due to declining local supply and increasing demand as a result of population growth.

Given that the dried fish marketing chain represents an entirely different system from the fresh marketing chain, it was deemed appropriate to deal with it separately. The following sections describe the activities of some of the key actors involved in dried fish processing.

Processors

October to March are the main months when fish processing takes place in Bangladesh. The main species which are used for drying are chhuri (Ribbon fish), loyitta (Bombay duck), fashia (anchovies), and chingri (shrimp). Other species, which are also dried and traded, but in smaller quantities include, poma, pomfret, chapla pata (sting ray), hunger (shark), datina bol, and suna bein.

Two categories of workforce can be distinguished within the processing industry; i.e. the owners of drying enterprises, who usually have a dadan from Aratdars in Chittagong, and the labourers. The latter also include female workers.

The seasonal income of an owner of a drying enterprise is of the order of Tk100,000 to 200,000. According to the processors (e.g. Kuakota), labourers get 50% of the profit after deduction of all costs. A labourer's seasonal income is of the order of Tk15,000 to 20,000. Women workers mostly belong to the hardcore poor and tend to be paid on a daily basis (i.e. Tk50 – 100/day).

Problems stated by processors include the following:

- Overall, fish supply is declining, and certain species are becoming quite rare;
- Lack of security, e.g. piracy of dried fish transported by boat, or fear of being robbed at night at the drying site close to the beach.
- Lack of capital.

Traders

Chittagong Asadgunj wholesale market is the hub of the dried fish industry in Bangladesh. It consists of 24 Aratdars and about 200 wholesalers. It is estimated that 10,000 to 20,000 tonnes of dried fish move through Asadgunj wholesale market per annum. The aratdars are primarily commission agents (2% commission per

transaction), whereas the second category buys the dried fish, stores it and sells it to the markets highlighted in Figure 4. There appears to be a traditional obligation whereby the wholesalers have to buy through aratdars (dadan providers).

Regarding capital endowment and market share, 5 – 6 aratdars and 10 – 15 wholesalers dominate Asadgunj dried fish market.

Constraints expressed by dried fish aratdars and wholesalers include the following:

- Declining fish production. According to them, there are no problems with marketing but with supply;
- Hilsha is not dried in sufficient quantities, due to demand for fresh fish;
- Returns on dadan are becoming lower as a result of declining turn-over;
- Lack of quality of dried fish. For example, exporters state that there is a lack of good quality dried fish. Also, some locations have a better reputation for good quality dried (e.g. Rangabali and Kuakota), whereas others seem to be lacking quality.

Costs and margins involved in processing and marketing of dried fish

Table 8 shows the costs and margin involved for processing Bombay Duck in Kuakota and selling it in Chittagong Asadgunj wholesale market. The processor's net income and marketing/processing margin appears to be reasonable. However, it ought to be mentioned that these calculations are based on average price figures. It was reported that the price for fresh Bombay Duck in Kuakota may be as low as Tk5 per kg during a glut (e.g. in October / November).

Table 8: Processing and Marketing of Dried Bombay Duck from Kuakata to Chittagong

Prices, Processing and Marketing Costs	Tk/kg	%
Selling price of fresh fish: fisherman to processor (on average, Tk5,000 per 400kg of fresh fish)	12.50	
Selling price of fresh fish, equivalent to dry fish (4 kg of fresh fish are required to obtain 1 kg of dried fish)	50.00	64%
Processing costs (Tk500 / 40kg of fresh fish) (according to processors this includes labour, fixed costs of drying racks, etc)	12.50	
Marketing Costs		
Transport to Chittagong per truck		
Truck fare	1.10	
Arrangement fee with transport company	0.10	
Labour (carrying)	0.25	
Loss (2.5%, mainly weight loss)	1.95	
Aratdar commission in Chittagong (2% of selling price)	1.56	
Total costs (purchase of raw material, processing losses, and marketing)	67.46	86%
Selling price in Chittagong: Processor to Wholesaler (on average, Tk75 – 80/kg of dried Bombay duck; processor is unlikely to travel to Chtg given the trust between him and the trader)	78.00	100%
Net income for Processor	10.54	14%

NB: - Percentage figures are in relation to buying price by wholesalers in Chittagong Asadgunj Market;
- The survey was conducted in January 2002.

Credit Access for Fisherfolk and Traders

Aratdars are at the centre of the financial system of the fish marketing chain, in that they finance both backward and forward linkages. Establishing firm supplier and buyer relationships is one of their main motivations for providing often substantial amounts of loan. By providing a loan, the dadan taker is obliged to sell through or buy from the aratdar, who benefits in the form of a commission (i.e. about 5% in the case of fresh fish traders, and 2% in the case of dried fish aratdars). At the same time, the aratdars take a certain amount of risk in that credit takers can make financial losses, or "disappear" altogether. Table 9 summarises the positive and negative sides of the dadan system as encountered in 2001/2002.

Nevertheless, there are large variations in the informal credit system, and changes are occurring such as:

- The strong presence of NGOs appears to have led to lower interest rates in certain parts of the country (e.g. Patuakhali), by creating competition with traditional money lenders.

- Emergence of so-called new dadondars, who are in fact only moneylenders (e.g. Latifpur). They are not involved in trading activities as such but monitor sales transactions by fishermen who have a loan from them. The new dadondars, are likely to have accumulated their capital in other businesses. They claim a fixed percentage of the sales transactions (e.g. 20%). Women are also active as new dadondars.

- Fishermen appear to benefit if they are able to deal directly with aratdars rather than through paikers cum money lenders. In this case they only have to pay a certain commission to the aratdar like anybody else. However, this implies a minimum scale of catches.

Table 9: Positive and Negative Sides of "Dadan" in Fish Marketing

Pros	Cons
• The fish catching and marketing system would not be as efficient as it is without the substantial amounts of credit injected by aratdars. Certain developments would probably not have taken place, or only at a much slower pace, without their financial involvement. • Given that "firm" business relationships are established, transaction costs such as searching for trustworthy business partners and contract enforcement appear to be comparatively low. The resulting interlocked transactions enhance the speed at which a commodity moves through its marketing channels. • Long established dadan relationships between traders tend to be built on trust, which again reduces transaction costs. • Aratdars have funded an industry which was largely neglected by formal banks and NGOs. This has provided large numbers of people in coastal areas with access to credit, which they would not have had otherwise. This has created employment and improved food security at micro and macro levels. Indirectly, the poor are likely to have also benefited due to the spin-off effects created.	• There is scope for exploitation due to the mostly informal nature of the credit arrangements. In particular, fisherfolk depending on intermediary traders cum moneylenders (i.e. dadondars) are often exposed to dubious business practices, the rules of which can vary from location to location. • Minority groups appear to find it more difficult to stand their ground when dealing with business partners of the majority. This may include Buddhist dried fish traders who have provided advances to suppliers, or Hindu fishermen having to pay a higher interest rate on their dadan (i.e. through substantial reduction of selling price below market rate). • The informal credit system has the tendency to create dependency relationships resulting in increased indebtedness over time. • Due to the informal nature of the system, lenders may sometimes use violent measures to pursue their interest.

Conclusions

Both fishermen and traders state declining supplies as their main problem. Some stakeholders such as aratdars predict that only deep-sea fishing will survive in the long-run. Also, more concentration is likely to occur within fishing communities (i.e. fewer people will own bigger boats).

Where catches will decline beyond a certain level, this may well lead to uncompetitive situations in that traders and moneylenders will pull out of affected locations. This will most likely result in a less efficient marketing system in that trader competition will decrease.

In addition to the demand for seafood products in overseas markets, there are exports of certain marine fish species (e.g. hilsha) to India. This appears to put upward pressure on domestic prices.

The decline in supplies of domestic marine fish is at least partly compensated for by increased production of freshwater fish (i.e. mostly from aquaculture), and imports of fresh and dried fish from Myanmar and India.

Although there is scope for improvement, marketing is less of a constraint, according to the stakeholders consulted. Areas which can potentially be targeted for marketing related improvements include, more emphasis on marketing training at community level, improvements of market infrastructure (i.e. often only small improvements are required), better post-harvest handling (including reduction of chemical use in dried fish processing), and better exploitation of export opportunities.

Overall, the marine fish marketing system is quite efficient, in that physical and qualitative losses are small. The marketing margin appears reasonable given the highly perishable nature of the product. In particular, this applies to the case of fresh marine fish marketing. The dried fish distribution system is also efficient, however fishermen supplying the processing industry receive low prices for their fish when there is a glut especially in the more remote areas.

If fishermen are "exploited" due to loan arrangements with traders, this reflects inefficiencies of the credit system (the opportunity cost of capital is very high in Bangladesh; i.e. 5 – 15% interest per month). Nevertheless, there are variations in the informal credit system and changes are taking place. The credit conditions are more favourable in certain locations compared to others.

The production and marketing of dried fish will see changes. Less fish will be processed, even in remote areas, as a result of:

- declining fish catches,
- increased demand for fresh fish (due to increases in population and purchasing power)
- better transport links,
- ice supply, and other means of preservation.

At the same time, some fish will continue to be consumed mainly in dried form (e.g. ribbon fish). Also, there is a demand for good quality dried fish for export, which according to traders is currently not met.

Some of the traders will be squeezed out; e.g. there will be more concentration at wholesaler level. The contradiction between market efficiency and equitability will remain at the retailer level. On the one hand, many retailers and vendors including women depend on fish marketing for their livelihoods, on the other hand this considerably adds to the marketing margin. Ultimately, it will be the consumers who have to bear this cost.

Due to declining fish supplies, parts of coastal fishing communities will be forced into other employment. As a consequence, alternative income generating activities (IGAs) need to be urgently identified and created.

References:

Atiur Rahman, M Ashraf Ali, Farooque Chowdhury (2001), People's Report on Bangladesh Environment 2001; Unnayan Shamannay, The University Press Limited.

The Bangladesh Observer (16 July 2002), Acute Hilsa crisis this year in Chandpur – Export may fall drastically; Dhaka.

Dastidar R. (2001), Literature Review on Fish Distribution from Coastal Communities – Market and Credit Access Issues; Paper prepared for workshop on "Poverty Alleviation and Livelihood Security among the Coastal Fishing Communities – Market and Credit Access Issues", 27-28 March 2001, Chittagong.

Department of Fisheries (2000) Brief on Department of Fisheries, Ministry of Fisheries and Livestock, Government of Bangladesh.

Coulter J.P. and Disney J.G. (1987), The Handling, Processing, and Marketing of Fish in Bangladesh, ODNRI Bulletin No. 1.

M Muzaffar Hussain and Md. Helal Uddin (1995) Quality Control and Marketing of Fish and Fish Products: Needs for Infrastructure and Legal Support.

OBSERVATIONS ON ASPECTS OF THE MARINE POST HARVEST FISHERY SECTOR OF BANGLADESH

Ansen Ward, IMM LTD

INTRODUCTION

The paper describes some of the main issues associated with aspects of the marine post-harvest fishery sector and some of the changes which have occurred in the sector within the last 15 years. The paper focuses on handling and processing issues related to the traditional fishery that supplies fish for domestic consumption. The information in the paper is derived from semi-structured interviews with key informants and observations during January and February 2002 at fresh fish and dried fish markets as well as handling and processing sites in Dhaka, Patuakhali, Kuakata, Bagerhat, Khulna and Satkhira. In addition to Kuakata, visits were also made to three project communities: Lebukhali, Debraj and Kulla. Secondary source information from various reports and publications has also been used where necessary. After describing various observations, the paper concludes with ideas for intervention in the context of the FAO Code of Conduct for Responsible Fisheries.

THE POST HARVEST SECTOR

The fisheries sector plays a vital role in the national economy in terms of income generation, employment and nutrition. Marine landings make up approximately 25% of total fish production in Bangladesh. Approximately 95% of marine landings are derived from the small-scale estuarine and near shore coastal fisheries (Mahmood et al undated). The main fishing methods are set bagnets, gillnets, seines, longlines and trawls.

Historically, activities associated with marine fishing and processing were dominated by the hindu community, particularly members of the jalada caste. Shortage of land and other economic opportunities has led to an increase in the number of muslim fishermen (BOBP 1985)(DFID 1998). Traders (aratadars, paikers, beparies) are the link between the fishermen's catch and the consumer. There are those who own boats and gear who may not actively fish and there are labourers engaged in fishing, sorting, processing, marketing and transport activities in urban and rural areas. Shrimp fry collection is an important economic activity with women, children and men involved in the fishing stage. The supply of ice is also important, providing skilled and unskilled employment opportunities. Fishing, processing and distribution is largely undertaken by the private sector. Aratadars (wholesale traders) are important providers of credit to suppliers and buyers of fresh and dried fish and are thus major players in the sector.

Many occupations are seasonal and influenced by the major fishing seasons. It is estimated that there are at least 7.3 million people living in coastal marine fishing villages. Many of these are engaged in fishing and related activities. It is not clear

how many people rely on the post-harvest fishery sector for their livelihood, Islam (1994) suggests that in the late 1980's and early 1990's there were approximately 500,000 full-time and 2.5 million part time marine fishermen. DFID (1998) suggests there are approximately 500,000 marine fishermen.

Fish is important for food security. Approximately 80% of animal protein consumption is from fish, much of this from freshwater/inland sources. Consumption of marine fish is widespread, but concentrated in coastal areas and urban centres. Consumers will buy fish according to species, product form, quality and quantity. Poorer consumers tend to buy low value species such as small-pelagics, small sized mixed species, by-catch and dried fish in small quantities. Certain dried fish are associated with low income consumers including people from the hill tribes. These are fashia, lotya, chingri and sarpatta (small sole).

The Ministry of Fisheries and Livestock provide policy guidance for the development of the post-harvest sector in the GoB Five Year Fisheries Plans. The Department of Fisheries provide management and development support and policy advice. A number of other government institutions are responsible for marine fisheries activities – Ministry of Industry, Ministry of Commerce, Ministry of Shipping, Forestry Department, Ministry of Co-operatives and Local Government and the Planning Commission. The Bangladesh Fisheries Development Corporation are concerned with the supply of inputs and marketing. The Fisheries Research Institute and the Universities of Khulna and Chittagong undertake post-harvest related research. Various NGOs are, or have been, involved in post-harvest activities mainly centred on skills training and provision of credit (DFID 1998).

SUPPLY OF FISH

The main sources of marine fish are the waters off Cox's Bazaar and Chittagong and the inshore waters from Noakhali to the Sundarbans. Set bag net and gillnet fisheries are found throughout the coast. An important longline fishery is based in the Cox's Bazaar area. The majority of indigenous trawlers are based in Cox's Bazaar and Chittagong. Frozen by-catch is landed by deep sea trawlers which target shrimp and marine fish for export. Fish, particularly hilsa, is also imported from Mynamar. Dried fish are imported from India.

The main commercial species are hilsa, catfish, jewfish, Indian salmon, hairtails, ribbon fish, various clupeids, Bombay duck, pomfret, shark, skate, perch (bhekti), mackerel, sardines, prawn and shrimp. Fisheries are seasonal, with marine landings generally peaking during October to February and the main hilsa season being between May and October.

Whilst there has been an increase in fishing effort, particularly in the trawler fishery - the catch per unit effort in many fisheries has declined. Whilst overall landings may or may not have changed significantly, profit margins lower and in some locations trawler operators find it difficult to make a profit. As a result some boats lie idle. In both the trawler fishery and the small-scale marine and estuarine fisheries, in some areas, fishermen are leaving the sector, or would like to leave if alternative livelihood options were available. In some fisheries there are new entrants.

A perception some stakeholders from of the private sector have is that the catch per unit effort as well the overall quantity of marine landings have reduced because of a variety of reasons:

- shrimp fry collection
- pollution from oil spillage and discharge by commercial vessels
- fertiliser run off
- over and illegal fishing by foreign trawlers
- use of small mesh nets
- development of shrimp farms
- environmental change e.g. siltation
- by-catch from shrimp trawling
- lack of enforcement of regulations
- theft of gear, catch, boats at sea

The reduction in marine supply is reflected at the market level. In Dhaka the quantity of marine fish from Bangladesh waters reaching Kawran Bazaar and Showarighat Markets is down by over 40% compared to ten years ago. A similar situation is observed at Fisheries Ghat in Chittagong. To a certain extent the gap created by this shortfall is being filled by freshwater fish and hilsa from Myanmar, India and Thailand.

There is also evidence from some traders that fish such as hilsa are now landed in more places within the country. This may be due to changes in fishing areas, improved communication opening up new landing areas and the wider availability of ice, which does not necessarily restrict boats to operating from particular landings.

Other changes in supply are that fish are on average now smaller in size and some species such as certain shrimps, pomfret, ribbon fish and jewfish are now much rarer.

In some areas fishermen are leaving the sector if they can and turning to other work such as agricultural and shrimp farm labouring and rickshaw pulling. These changes may be a reflection of lower catches.

PROCESSING, HANDLING AND DISTRIBUTION

Marine fish are consumed fresh, dried or salted. High value species such as prawn and pomfret are also exported as are dried jewfish, shark fin and mud crab. There is a small frozen fish trade and a live fish trade (prawn fry). Small miscellaneous fish caught as trawler by-catch, if not discarded at sea, are landed in frozen form and either enter the fresh fish market or are dried to produce fish meal.

Fresh fish are usually sold whole, but some filleting and gutting takes place at the retail level. Unless the fish are specifically landed for drying or are landed from short fishing trips near retail markets, ice is normally used at some or all stages of distribution to aid preservation.

Use of Ice

Ice has been used in the fishery sector for over thirty years in Bangladesh. Block ice plants are established in Cox's Bazaar, Chittagong, Dhaka, Khulna, Barissal, Bagerhat, Patuakhali, Mohipur/Alipu, Dhaka and Noakhali and supply ice for use on-shore as well as at sea.

Ice is used on board trawlers and mechanised boats which fish for more than a day. Sixty to eighty cans (4.8 to 6.4 tonnes) of ice can be used on twelve-day trips to ice 100 to 150 maunds of hilsa (6 tonnes).

High value fish are iced and stored in insulated boxes at markets in landing centres. Some high value fish are also frozen and stored in domestic chest freezers.

Ice is applied during repacking at markets and during transportation by road and boat. Retailers in some markets ice fish before and during sale. Ice is sometimes used if fish have to be stored overnight for sale the following day.

Improvements in road communications have meant that ice is now more easily transported to remote rural areas.

Demand for ice increases during times of seasonal peak landings such as the hilsa season from May to September. Higher temperatures also mean more ice is required. Electricity supply problems at this time of year can lead to shortages in ice supply. Anecdotal evidence suggests that some traders may not be able to get sufficient ice during these periods and this affects fish quality. During periods when the quantity of fish landed is small ice plants either do not operate or operate on a part time basis.

Over the last ten years the number of plants in areas such as Patuakhali District has increased dramatically. In Alipur and Mohipur for example there are now 24 ice plants each capable of producing between 150 to 400 cans of ice within 48 hours. There were only 2 or 3 plants 10 years ago, with most new plants having been established in the last 3 years. At the time of the visit however only 4 plants were working due to low demand for ice. A new electric power line installed in 1993 helped the establishment of these new plants.

Nevertheless, a representative of an ice plant association stated that "throughout Bangladesh ice plants are now a losing concern". And that in some areas plants are closing due to a lack of fish and are being sold for scrap. Even so there were reports during the visit that investors were looking to build new plants in areas where there already appeared to be over-capacity.

Infrastructure and Markets

Facilities at landing sites and main wholesale markets vary in design and level of sophistication. Aside from shrimp processing plants, the most developed infrastructures are the Bangladesh Fisheries Development Corporation Market complexes which consist of a market area on the ground floor and trader offices on the first floor. Not all of these facilities are used to the fullest extent.

Key features of some private sector fresh fish wholesale markets are the rudimentary nature of facilities, limited or no roofing (are not all weather), limited space, with repacking and icing often done on streets and pavements surrounding the main market area, lack of water supplies and toilet facilities. The ground surface of enclosures is either bare or part rendered. Drainage is often particularly poor and during hours of business, water from various sources accumulates to create dirty pools. Design is such that mobility within the market is difficult at peak times and the risk of bacterial contamination of fish is high. Particularly if fish are removed from baskets or sacks and placed on the ground for auction. These markets are often privately owned, or leased, by a number of individuals. Ownership and responsibility can change due to political processes or according to mutual agreements.

Retail markets vary in terms of size and level of infrastructure. Some retailers sell from very basic sites often by the side of roads. Whilst other markets, particularly in urban areas, are more established with roofs, drainage, rendered slabs and lighting. Some retail markets are often within more general food markets where fruit and vegetable and other meat can be purchased.

Dried fish wholesale markets consist of a series of go-down/stores within which sacks or piles of dried fish are held for periods of time. To the front of the stores are sitting areas where traders meet prospective purchasers and samples of fish are on display. Fish are sorted/graded and repacked either inside or nearby the market. There may be an animal feed mill nearby.

Some long established wholesale markets are in areas, which are difficult for modern road transport to reach (e.g. trucks) and are easily congested. In some rural areas visited road transport is still seen as a problem, particularly if roads are narrow and poorly maintained making access difficult for trucks. Large numbers of ferry crossings delay fish distribution.

Packaging and Storage

At sea fish are usually not packed into containers. After landing a variety of containers are used to transfer fish from one point to another during distribution. Woven baskets with or without polythene liners, polypropylene sacks and aluminium bowls are typical containers used. Fish are also transported in bulk on the back of lorries. Some fish are packed in plastic bags. Dried fish are normally distributed in sacks. Salted hilsa are packed and distributed in cans.

Transport

After landing fish are transported long distances by boat, bus, lorry or pickup truck. For short distances between landing and market or between wholesale and retail market headloading, pushcarts and rickshaws are normally used.

There have been improvements associated with boat and road transport in some areas, which have made it easier and quicker to move fish around the country. Mechanised boats are now widely used and there has been an increase in the number of private transport companies. In some areas roads have been surfaced, repaired and widened. On some routes the numbers of ferries have been reduced due to bridge building and

there has been an increase in the number of small vehicles such as pickups, which are ideal for carrying smaller consignments of fish.

Despite these improvements there are still roads which slow down the transport of fish such as stretches of the Chittagong to Dhaka road. Roads to wholesale markets in major urban areas are often very narrow and block with traffic easily constraining the movement of fish, buyers and ice in and out of markets.

Food Safety and Fresh Fish

During the March 2001 project workshop the use of formalin (solution of formaldehyde in water) on fresh fish was raised. It was alleged that this chemical is being used to extend the shelf life of fresh fish imported into Bangladesh. Research by the project did not produce any evidence that formalin is being used.

Some retailers of low value pelagics such as scads and mackerel were observed to sprinkle a mixture of salt and soda on to fish during repacking to make the fish firm. This practice is also said to be used on hilsa. The soda is said to be washing powder. Retailers say that if they did not use salt/soda then the fish would be soft and fetch a lower price. Soda was also said to be used on hilsa from Myanmar to make it whiter. Retailers of pangas apply red dye to the fish's lips and fins to enhance its appearance. The dye is said to be that used to colour rice or cows blood is used. Most fish seen during the visit on sale at major ferry landing areas had been treated with some sort of colouring agent. Solutions of red food colouring are sometimes applied to fresh fish to enhance appearance before the fish are retailed. Chemical analysis was beyond the scope of the research. More information is required on these practices before conclusions can be drawn.

Post Harvest Fish Losses – Fresh Fish Trade

Improvements in road communications and the use of ice, coupled with smaller catches and consignments of fish has meant that post-harvest fish losses related to quality deterioration of fresh fish has greatly reduced over the last ten years at all stages of distribution. A loss in quality does still occur but the incidence and magnitude of this loss has significantly decreased.

Where fishing times are short (several hours) and retail markets are within a short distance of the landing centre consumers are able to purchase good quality fish, even if ice has not been used. Alternatively, after capture fish may spend several days iced on board the fishing vessel before being landed and then transported by lorry or boat for 10 hours or more to major wholesale markets for onward selling. The time temperature factor, inadequate use or lack of ice on board mechanised boats, poor quality ice, unloading, packing and sorting in unhygienic conditions are factors which facilitate spoilage and quality degradation.

Some fish are sold according to quality grades as well as according to size. During summer high hilsa landings can coincide with a shortage of ice and lead to quality degradation. Low quality fish are sometimes landed by trawlers and mechanised craft which stay at sea for more than 7 days. Poor quality low value small pelagics such as kauwa are often sold in urban areas.

Specific handling and distribution practices which lead to a loss in quality of fresh fish include:

a) Inadequate icing on board vessels and over long fishing trips

b) Fish is loaded, unloaded and repacked several times during distribution. This facilitates damage and increases the risk of microbial contamination, leading to a reduction in shelf life.

c) Over packing on board vessel and during transport causing physical damage.

d) Unhygienic conditions on board trawlers and in markets increases the risk of microbial contamination and hence an increased rate of spoilage.

e) Although ice is now widely used on shore best practice is often not applied. The ice:fish ratio is often not ideal. Ratios of 1:3 to 1:5 were observed for long distance transport. More ice should be used to achieve adequate chilling and maintenance of low temperatures. A better ratio would be 1.5:1.

f) Ice is often made from river water and therefore may carry a high microbial load increasing the risk of contamination.

Consideration needs to be given to the cost implications of addressing these issues and stakeholders willingness to change practices. Furthermore, by improving the quality of fish may increase the cost of this fish to the consumer and this may have negative implications for the poorer consumers who rely more on fish of low quality and low price.

Dried Fish

A proportion of marine landings are sundried for either domestic human consumption or animal feed. Jewfish are salted and dried in various locations for export from Cox's Bazaar to Hong Kong and Singapore.

Fish for domestic consumption are sundried in Cox's Bazaar and on various islands (Dubla, Moheshkali, Sonadia) and remote coastal areas such as Kuakata between September and April – the non monsoon period.

Fish are sun dried on racks and frames or mats laid on the ground. Dried fish are stored in the drying yards for days or weeks before being transported in sacks by road or boat to Asadgonj dried fish market in Chittagong. Here the fish are sorted and stored in go-downs owned by the numerous aratadars and paikers who have a major influence over the trade. From the go-downs the dried fish are transported by lorry to wholesale markets throughout the country.

Hygiene at dried fish processing sites are poor with human faeces and fish carcasses strewn nearby. Apart from the public health issue, such conditions will promote and maintain a background population of blowflies, which infest fish during drying, especially in the warmer months when rain makes drying difficult. Areas of shrub

vegetation nearby drying areas provide ideal shade for blowfly during periods of sun and heat.

The quantity of fish that enters the traditional drying sector has reduced because of reduced landings of fresh fish particularly in the Cox's Bazaar area, and because more fish is now being iced and sold fresh. Some species, which are traditionally dried, are also much rarer such as pabda (Ompok pabo), batasi, shole, gulsha, sharputi, kalighonia, big popa, and lakkhya.

Ten years ago it was rare to find dried fish from India on the market. However, a significant proportion of dried fish sold in Bangladesh now arrives from India (churi, nalia, dhancha, loittya, kachki). Some of this fish bypasses the traditional centre for dried fish marketing, Asadgonj market in Chittagong and instead is supplied direct to various districts.

According to traders in Kawran Bazaar, Dhaka, four years ago approximately 40% of dried fish was destined for the poultry feed sector. Now due to the availability of cheap imported feed from Australia and New Zealand much less dried fish is used. Also, there has been a growth in the demand for dried fish for feed for fish culture (pangas).

In Kuakata, 10 years ago there were 7-8 dried fish processors now (i.e. 2002) there are 24. Although the volume of fish processed at the site has increased over time, this is divided between more processors who now each handle less fish than they would have if they had been operating 10 years ago. There has also been a change in the way fish is bought from fishermen by some processors. Dadan is now seen as risky as fishermen are less able to catch enough fish to cover the advance. So some processors now prefer to buy fish with cash.
Dried fish is now also transported by truck to Chittagong rather than by boat due to the increased incidence of theft at sea.

Use of Insecticides

Evidence of the use of insecticides by dried fish processors and traders to combat insect infestation of drying and dried fish came to the attention of the Bangladesh authorities and media in the mid 1980s. In the early 1990s specific research (Walker & Greeley 1991, Ward 1992, Cox 1992, Gain, undated) showed that insecticides are used in two ways:

- fishes are dipped in solutions before drying to prevent blowfly infestation during the drying process;

- dried fish are treated with insecticide powders to prevent infestation by beetle larvae and adults (*Dermestes spp*) during storage.

Insecticide Use During Drying

Rain, dull weather and humid conditions hamper sun drying and fish remain moist and prone to attack by blow fly larvae. To prevent infestation during the drying process fish are dipped in insecticide solutions. According to Walker and Greeley

(1991) the insecticide most commonly observed and reported as being used on fish was dichlorvos, marketed by Ciba-Geigy (Bangladesh) Ltd as "Nogos 100 ec". This is an organophosphate compound, which is meant for the control of insect pests on rice and vegetable crops.

In spite of a heightened awareness amongst processors of the potential dangers of insecticides processors still use insecticides such as Nogos, especially during the two difficult drying months (Feb/March). Jewfish are also dipped in a solution containing an unknown chemical to protect fish from insect attack during drying.

Insecticide Use on Dried Fish

The majority of dried marine fish produced in Bangladesh passes through Asadgonj market in Chittagong where in the 1980s and early 90s traders were known to apply insecticide powders to dried fish to prevent infestation by beetles. Customers were said to pay 10 – 15 % less for beetle damaged fish. There is also a weight loss incurred (Walker & Greeley 1991). Powders that were commonly used by traders included DDT, Basudin 10g (diazinon) and Gramoxin. Other insecticides used on dried fish go by the names Crush, Finis and Malathion dust. Analysis of samples of insecticides used showed that Benzene Hexachloride (BHC) and Carbyl as well as sub-standard formulations of DDT are also used (Cox 1992). Insecticide use was also known to occur at other markets and storage areas.

The research in 2001 and 2002 has shown that Basudin, DDT and Gamoxin are still used by some traders in Cox's Bazaar, Chittagong and Dhaka. These are either spread on the fish or around the gunny bag containing fish. During the rainy season it takes about 20 days for a sack of fish to become infested at Asadgonj Market and approximately 250 g (40 Tk worth) of any insecticide powder is used to treat one sack of fish.

Food Safety Implications

None of the insecticides said to be in use are approved by the World Health Organization for use on fish or fish products. Most are for pest control on agricultural crops. The only two approved insecticides for use on dried fish are pirimiphosmethyl and pyrethrum synergized with piperonyl butoxide.

There is no information on the potential harmful effects these chemicals may have on dried fish consumers or on the users of these chemicals. Insecticides enter the human body as a result of ingestion, inhalation and absorption through the skin. Some are known carcinogens. Dichlorvos can cause chest problems, vomiting, and paralysis. High levels of DDT in pregnant women has been linked to premature births and low-birthweight infants. Both contribute to infant mortality (ENV 2001). DDT ingestion can cause damage to the nervous system and seizures (ATSDR 1995).

Consumers of dried fish are eating products which may contain the residue of one or more potentially harmful substances. Dried fish is consumed by a range of stakeholders in Bangladesh, but it is often seen as an important source of animal protein for the poor, particularly in north Bengal and other rural areas. A key asset of the poor is their health which in turn determines their ability to undertake income generating activities such as labouring. Health problems will jeopordise what may be their main and only source of income as well as having cost implications. Labourers

who use these chemicals expose themselves to risks from inhalation and absorption of the chemicals through their skin.

FISH CONSUMPTION

Changes in fish supply are influencing consumption patterns of fish. Popular species such as hilsa are now expensive. Consumers who once were able to afford hilsa are now switching to cheaper fish such as imported rui, small species of freshwater fish, frozen by-catch and in some areas such as north Bengal consumers are turning more to dried fish. Consumers who previously did not buy frozen fish are now buying. Some consumers now eat less fish than they did in the past. Rather than buying a kilogramme of fish they now buy half a kilogramme. Whilst meat is a rich persons food, eggs are more affordable and are consumed as a substitute for fish. The reduction in the quantity of dried fish being produced is reflected in consumer behaviour. In Dhaka, where consumers preferred Bombay duck, now a wide variety of types of dried fish are consumed as Bombay Duck is less available.

INTERVENTION IDEAS

CODE OF CONDUCT FOR RESPONSIBLE FISHERIES

Broad best practice guidelines for processing and trade activities are presented in the FAO Code of Conduct for Responsible Fisheries (CCRF) (FAO 1995, 1998, 2000). This voluntary code provides a set of general principles and standards of behaviour and good practice, which aim to ensure sustainability, equity and safety in the fisheries sector. The CCRF is used to guide fisheries development policy. Article 11 (Post-harvest Practices and Trade) contains the main guidelines associated with post-harvest activities. This article is divided into three components:

11.1 Responsible Fish Utilization
11.2 Responsible International Trade
11.3 Laws and Regulations Relating to Fish Trade

Responsible Fish Utilization is concerned with consumer protection, food safety, quality assurance, recognition of the importance of the social and economic role of fisheries, reducing post-harvest losses, research, promotion of environmentally sound post-harvest practices and value-addition.

The CCRF provides a broad framework within which issues raised in the paper on improved handling, the use of insecticides and consumer protection should be considered. At the first CCRF workshop in Bangladesh in April 2002 the Government of Bangladesh stressed the importance and relevance of the Code to National Fisheries Policy and fisheries development. It was stated by the Director General of the Department of Fisheries that the CCRF is the only available, useful and acceptable guiding principle for utilising, conserving and managing fisheries and aquaculture resources with a view to achieving long term sustainable use of fish resources. An outcome of the workshop was that a CCRF Working Group be established to co-ordinate initiatives.

The research findings will have clear implications with regard to the adaptation and implementation of the Code to country needs regarding the post-harvest fishery sector.

HANDLING AND PROCESSING

In relation to handling practices, appropriate technical guides to good practice exist e.g. Johnson S, Clucas I (1996) Maintaining Fish Quality: An Illustrated Guide. Chatham, UK: Natural Resources Institute. These could be adapted and blended with examples of good practice which already occur in Bangladesh such as those associated with retailing fresh fish in some Dhaka markets, handling and transportation of shrimp and jewfish drying for export (minus the use of insecticide). Bearing in mind activities which are associated with quality deterioration the information should be tailored to the needs of mechanised boat operators, small-scale retailers, fish market labourers and dried fish processors. The guide(s) should be pictorial and in Bengali and the document ideally laminated. It could form the basis of, or complement training initiatives, by Government and NGOs. It is recommended that the socio-economics of improving handling practices should be clearly understood particularly in respect of the poor in the sector and the food security of poor consumers, before efforts are made to change current practices in the sector.

INSECTICIDES

Misuse of insecticides should be addressed in three ways:

- identify safe alternatives
- continue to raise awareness of the dangers
- Improve the current understanding

Safe Alternatives

Research into safe non-insecticide approaches to dealing with insect infestation has been undertaken by the DFID Post Harvest Fisheries Research Programme and work is currently being conducted in India. This work aims to develop an effective approach to controlling insect infestation, based on the principles of Hazard Analysis Critical Control Point (HACCP) approach. Bearing in mind the problem of infestation, Bangladesh should be viewed by DFID as a priority for the promotion and dissemination of the results of this research.

There has been a growing interest in the use of traditional or non-synthetic insecticide methods of insect control by researchers in different parts of the world. Various materials, such as neem, citrus peel, vegetable oils, and pepper have been used to repel insects by fish processors and traders in parts of Africa and Asia (Ward & Golob 1994, Johnson & Esser 2000).

The research noted that date palm leaves (khejurpata), betel and coconut leaves were used by a dried shrimp processor to control insect infestation. The leaves are placed on top of the shrimp and act as an attractant. There may be other traditional methods (coping strategies) in use which may have wider application. Research should be

undertaken to understand the potential of traditional methods of insect control in Bangladesh. Other non-insecticide methods that should be explored include the use of insect predators.

Awareness

Some processors and traders are aware of the dangers of using insecticides. Yet others are not aware of the possible risks of using insecticides not only to the consumer but also to themselves. Careful awareness raising amongst the various stakeholder groups – consumers, processors, traders, Government, and insecticide producers of use and abuse should be undertaken. This should be done in a way that avoids disrupting the trade which is the basis for the livelihoods of many thousands of people.

Improved Understanding

Whilst it is understood that insecticides are still being used on fish, there is a great deal that is unknown in Bangladesh.

Knowledge gaps include:

- how widespread is insecticide use in the post-harvest fishery sector?
- What quantities of insecticides are currently used on fish?
- what are the human health implications of insecticide intake?
- what effect does cooking and prior preparation of dried fish have on residue levels?
- what are the background levels of insecticides in marine and freshwater fish?

Resources permitting, efforts should be made to better understand these issues as well as to develop a system to monitor the situation.

OVERVIEW OF THE POST HARVEST SECTOR

Providing decision makers, planners and potential investors with a current and concise overview of information on the post-harvest sector would assist in the achievement of development objectives and the efficient use of capital. Such information would complement the Upazilla level, inter organizational and ministerial planning process for the fishery sector as suggested by the recent Government of Bangladesh Fisheries Sector Review. Much of the initiative for business investment at the local level is by the private sector and there is evidence to suggest that this investment would benefit from up to date information on the sector and the changes which are taking place. For example in some areas there has been an over investment in ice plants, with some plants now being sold for scrap and yet investors are still interested in establishing more ice plants.

A comprehensive and current understanding of the post-harvest sector should reflect the cross sectoral nature of many issues, reflect the needs of the sector, describe the changes which are occurring as well as the links to wider economic issues such as employment, food security, poverty reduction and the increasing importance of fish imports. Such an understanding could build on, amongst other initiatives, the:

- ODNRI (1987) Handling, processing and marketing of fish in Bangladesh.

ODNRI Bulletin No 1.

- DFID/BOBP (1998) Post-harvest fisheries overview. Information Bulletin 16. Post Harvest Fisheries Research Project, Chennai.
- Results of the DFID credit and market access research project
- GoB Poverty reduction strategy
- Rural development policy
- Other secondary source data
- FAO Code of Conduct for Responsible Fisheries

Further development would be based on consultation with the public, private, academic and NGO sectors. The development of such an overview is an activity which does not fall within the remit of the current project.

REFERENCES

ATSDR (1995) ToxFAQs for DDT, DDE and DDD. Agency for Toxic Substances and Disease Registry.

BOBP (1985) Marine small-scale fisheries of Bangladesh: a general description. Bay of Bengal Programme BOBP/INF/8. Chennai, India.

BOBP (2002) Report of the national workshop on the code of conduct for responsible fisheries – Bangladesh, 23-24 April 2002 Dhaka. Bay of Bengal Programme Report. BOBP/REP/93. Chennai, India.

Cox J R (1992) DDT residues in dried fish, Bangladesh analytical report. NRI Report.

DFID (1998) Post harvest fisheries overview. Information Bulletin 16. Post Harvest Fisheries Project, Chennai, India.

ENV (2001) Premature births in the 1960s linked to DDT. Environmental News Network.

FAO (1995) Code of conduct for responsible fisheries. FAO, Rome.

FAO (1998) Responsible fish utilization. FAO Technical Guidelines for Responsible Fisheries, No 7, FAO,Rome.

FAO (2000) Technical guidelines for responsible fisheries: responsible international trade, laws and regulations relating to fish trade. FAO sub-committee on fish trade, 7th session, Bremen, Germany. Draft Guidelines.

Gain P (undated) State of pesticide business and use in Bangladesh.

Islam M S (1995) Socio-economic status of marine fishermen and their upliftment. In: Sustainable Development of Marine Fisheries Resources in Bangladesh. Proceedings of a workshop held in Cox's Bazaar 29 August 1994. Bangladesh Fisheries Research Institute.

Johnson C, Esser J (2000) A review of insect infestation of traditionally cured fish in the tropics. Department for International Development, London.

Mahmood N, Chowdhury M J U, Hossain M M, Haider S M B, Chowdhury S R (undated) Bangladesh. Institute of Marine Sciences, University of Chittagong Report.

Walker D J Greeley M (1991) Cured fish in Bangladesh. NRI Report R1657.

Ward A R (1992) Report on a visit to Bangladesh to investigate the use of DDT on dried fish. NRI Report R1835.

Ward A R, Golob P (1994) The use of plant materials to control infestation of cured fish. Tropical Science, 34.

Consultation Workshops on "Fish Distribution from Coastal Communities – Market and Credit Access Issues",
Chittagong, 22- 23 July 2002, and Dhaka, 25 July 2002.

METHODOLOGY TO ANALYSE THE DISTRIBUTION SYSTEM OF FISH FROM COASTAL COMMUNITIES IN BANGLADESH, FOCUSSING ON MARKET AND CREDIT ACCESS ISSUES

Ulrich Kleih, Natural Resources Institute, University of Greenwich

Introduction

The project '*Fish Distribution from Coastal Communities in Bangladesh: Market and Credit Access Issues*' is a research project funded by the Post Harvest Fisheries Research Programme of the Department for International Development, UK (DFID). The project lasts from February 2001 to October 2002.

The ultimate goal of the project is to work towards poverty alleviation and livelihood security among the coastal fishing communities and those involved in the distribution chain. It is expected that the poor will benefit through the application of new knowledge focused on the utilisation, for human consumption, of fish from coastal fisheries. In particular, the project intends to contribute to improve the post-harvest utilisation of fish and its impact on the livelihoods of poor fisherfolk, processors, traders and consumers. The aim of this research project is to explore the dynamics of the livelihoods of the poor in the fish marketing chain in more detail to develop recommendations regarding the development of fish marketing and livelihood sustainability.

The following project outputs will be produced:

- An improved understanding of the trading and credit system for fish produced in poor coastal communities
- A validated methodology integrating market and credit analysis techniques with a livelihoods approach in a post-harvest fisheries context
- Policy recommendations benefiting the poor in coastal fishing communities and the fish distribution chain in Bangladesh

This paper describes the methodological issues associated with the development of a comprehensive understanding of livelihoods, marketing, credit, poverty and institutional issues, using a combination of Sustainable Livelihoods Approach and Sub-Sector Analysis. It also considers the dissemination aspects of the research which are seen as an integral part of the overall methodological approach.

In order to understand and analyse economic, marketing, sociological and technical perspectives from a macro as well as micro level, a combination of poverty profiling, participatory rural appraisal, rapid market appraisal, qualitative loss assessment, formal questionnaire surveys, workshops, institutional stakeholder interviews and desk studies

were designed and implemented during the course of the project. Project outputs are therefore developed from a mix of primary, secondary, qualitative and quantitative data.

Topics Investigated

Although a complete separation was not always possible, the following three main research areas were covered:

Analysis of the livelihoods systems of fishing communities. This started with an investigation of the capital assets available to different wealth groups of the villages, and their vulnerability context. Other aspects included, institutional, social, cultural and political context, investigating, amongst other things, patronage relationships between traders and fishing communities, social relations between the various parties involved in the trading and credit network, and distribution of non-economic obligations and rights. In addition, emphasis was placed on poor fish producers' and traders' access to institutions affecting their livelihoods (e.g. Local Government, community based organisations, NGOs).

Analysis of the marketing system, including mapping of the sub-sector, calculation of costs and margins, assessment of the pricing mechanisms of the fish (both for the producers and consumers), risk factors such as seasonality, evaluation of technical issues (e.g. post-harvest loss, increased necessity for food safety and quality control systems), identification of bottlenecks and opportunities such as availability of marketing information. In this context, it was also assessed how population growth, changing consumption patterns, and a tendency towards marketing concentration will impact on small-scale fish producers and traders.

Analysis of the credit system, including an assessment of inter-linkages between fish distribution and credit supply, possible market inefficiencies due to exploitative practices, access to formal and informal sources of credit by poor participants in the commodity chain, relative costs of credit, assessment of possible exploitative practices, and to what extent coastal fishing communities have been able to benefit from micro-credit programmes in Bangladesh (e.g. Grameen Bank). The credit analysis and recommendations took account of the possible types of credit and the potential to link and deliver them as part of the marketing process. In addition, the work looked beyond the fisheries sector for broader micro-financing lessons and related institutional arrangements.

The Sustainable Livelihoods Approach (SLA)

A livelihoods framework combined with traditional market and economic research techniques was used to analyse the three components highlighted, focussing on capital assets (i.e. human, social, financial, physical and natural), vulnerability context, policies, institutions, and processes. (See Appendix 2 for an outline of the Sustainable Livelihoods Approach, SLA).

Elements of Sub-Sector Analysis were combined with the SLA approach in mapping and analysing the linkages between different operators in the commodity chain and information related to their livelihoods.

Geographical Area Covered

The bulk of the survey work for this project took place in intervals between July 2001 and April 2002. The main geographical areas covered during the course of data collection, include:

- Six Fishing Communities in Chittagong (i.e. Latifpur), Cox's Bazar (Hatkholapara), Bagerhat (Debraj), Patuakhali (Kuakota-Panjupara), and Satkhira (i.e. Kulla) Districts;
- Assembling, wholesale and retail markets in the urban areas of Chittagong, Cox's Bazar, Dhaka, Patuakhali, Alipur / Mohipur, and Satkhira. In addition, numerous landing sites were visited near the fishing villages.
- Government and Non-government Organisations, and selected members of the donor community with an interest in coastal areas were mainly consulted in Dhaka and Chittagong as part of visits and workshop attendance.

Activities Undertaken

The project started with a one-month desk research in Bangladesh and the UK to study secondary literature, and prepare the survey methodology;

A workshop took place in Chittagong in March 2001, involving project collaborators and major stakeholders. This first workshop was organised at an early stage of the project in order to jointly prioritise research areas, design survey techniques and analytical tools, and identify channels of dissemination.

Two consultation workshops involving the research team and other stakeholders from government (e.g. ministries, research institutes), civil society (e.g. associations), private sector, non-governmental organisations, and donor community, will take place in July 2002 in Chittagong and Dhaka in order to present research findings, develop policy recommendations, and validate the methodology used.

The actual data collection mainly took place between July 2001 and April 2002, involving participatory, qualitative and quantitative survey techniques. In particular, the following survey techniques were used:

- Participatory Rural Appraisal (PRA)
- Questionnaire Survey
- Rapid Market Appraisal

May to July 2002 were used to compile the data collected and present preliminary findings to stakeholders. Final project reports will be produced by the end of October 2002. As already indicated above, the research results will be presented using a combination of Sustainable Livelihoods Approach and Sub-Sector Analysis.

Dissemination Activities. In addition to improved understanding of the distribution system of fish from coastal areas in Bangladesh and a validated methodology to study related issues, the main thrust of the project is the development and dissemination of policy recommendations benefiting coastal fishing communities and other poor participants in the commodity chain. Aside from scientific reports and briefing papers, it is envisaged to use electronic media (e.g. relevant web sites) to disseminate recommendations.

Collaborative Approach

The collaborators (i.e. CODEC and University of Chittagong), play a major part in survey design, fieldwork, data analysis, production of outputs, and dissemination thereof. The fact that they are active in the target areas will facilitate access to the communities, and increase the likelihood of research uptake. The actual fieldwork were undertaken by CODEC and NRI staff, in collaboration with staff and students from the University of Chittagong (UoC). CODEC and NRI primarily used participatory / qualitative methods of data collection in the research, whereas the quantitative elements of the field survey were covered by the University of Chittagong (i.e. Marketing, and Sociology Departments).

Appendix 1: Overview of Research Concept

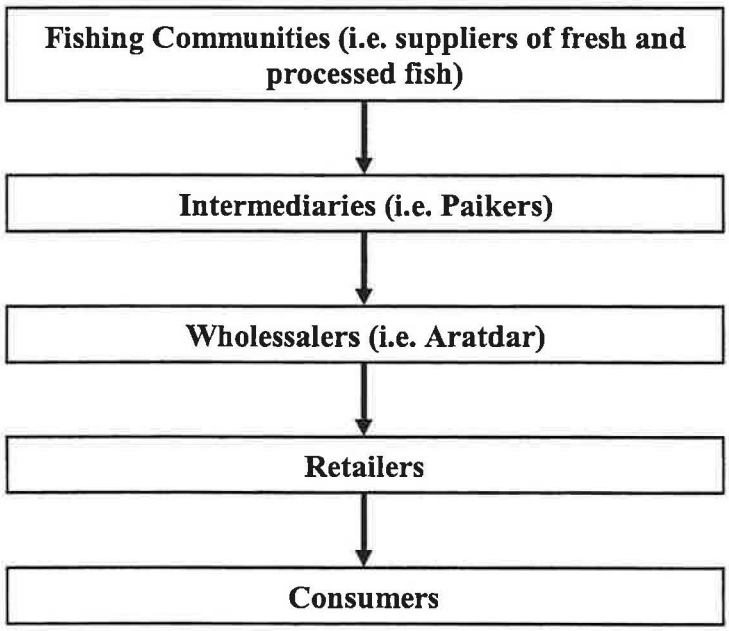
The following sections provide a brief outline of the research concept used for this project, namely:

- Collection and analysis of general data
- Mapping of main distribution chains for marine fish
- Type of information to be collected and assessed for each type of operator in the distribution chain (i.e. mainly information on livelihoods, marketing, and credit system)
- Data Collection and Analysis Methods
- Development of Recommendations.

Collection and analysis of general data

- Statistics of fish production, processing and marketing with emphasis on coastal areas;
- Number of communities, households, and people involved in marine fisheries sector at production, processing and marketing levels.

Mapping of main distribution chains for fish (fresh and processed) from coastal areas, using geographical area, background of fishing communities (e.g. ethnicity or religion) or type of fish sold (i.e. fresh or processed) as selection criteria:



NB: This is a simplified map for demonstration purposes

Using a livelihoods cum sub-sector approach, assessment for each operator category (i.e. fish suppliers and traders) of the following types of information:

Social map using criteria such as:
- Wealth,
- Gender,
- Age.

Household asset base:
- Human capital
- Social capital
- Natural resources
- Physical capital
- Financial capital.

Vulnerability context:
- Shocks
- Trends
- Changes
- Seasonality
- Pollution
- Etc

Marketing system
- Supply and demand situation
- Pricing mechanisms
- Prices (in real terms)
- Marketing costs and margins
- Technical post-harvest issues
- Food safety
- Information
- Infrastructure
- Changing consumption patterns
- Performance of marketing system versus equity considerations
- Etc

Credit system
- Types of credit
- Access to formal and informal sources of credit by poor participants in the commodity chain, with particular emphasis on women
- Relative costs of credit
- Links between fish distribution and credit supply
- Patronage relationship
- Occurrence of exploitative practices
- Lessons form the broader microfinance sector
- Etc.

Policy, institutional and process issues (also beyond the fish production and trading context):

- National Government
- Local Government
- Donors
- NGOs
- Private sector

Data Collection and Analysis Methods

It is intended that the project will use a combination of the following survey techniques:

- Participatory Rural Appraisal (PRA)
- Questionnaire Survey
- Rapid Market Appraisal

Participatory Rural Appraisal (PRA) describes a family of approaches and methods to enable local people to share, enhance and analyse their knowledge of life and conditions, to plan and to act (Chambers, 1994). The tools and techniques include:

- Direct observation,
- Semi-structured interviews,
- Mapping and diagramming,
- Transect walks,
- Matrix scoring,
- Seasonal calendars,
- Trend and change analysis,
- Well-being and wealth ranking and grouping.

Advantages: Provides depth of understanding, (e.g. motivations and relationships), allows local population to play an active role in analysis and information generated would be 'owned' by them (empowerment).

Questionnaire surveys are usually characterized by the following:

- Preparation and testing of questionnaire,
- Use of statistical procedures to obtain sample (i.e. sampling method, and sample size),
- Use of enumerators to fill in questionnaires,
- Use of statistical programmes and techniques to enter, process and analyse data.

Advantages: Statistically valid estimates can be obtained that are representative of target population; Hypotheses can be tested.

Rapid Market Appraisal (RMA) is an efficient way to obtain policy-relevant and intervention-focused information about any commodity sub-sector (Holtzmann, World Bank website, 2001). RMA tends to include the following elements:

- Definition of a sub-sector,
- Review and analysis of relevant literature and available secondary data,
- Visit to physical facilities,
- Identification and interviews of knowledgeable observers of a subsector,
- Key informant interviews, using semi-structured checklists and guidelines.

Advantages: Provides depth of understanding (e.g. asks 'Why'); relatively time and budget efficient.

Development of recommendations, i.e. suggestions how the livelihoods of poor operators in the fish production and marketing system can be improved, looking at options within and outside the fisheries sector. This involves improvements to the:

- Household asset base
- Vulnerability context
- Policy, institutional and process context.

Appendix 2: Outline of the Sustainable Livelihoods Approach (SLA)

The ultimate goal of Sustainable Livelihoods is to maintain an income, to minimise social exclusion, achieve social equity and a long term productivity of natural resources without undermining livelihoods or compromising livelihood options open to others. The focus of the development debate moved beyond the state of resources and began to include people, livelihoods and poverty alleviation as highlighted in DFID's Sustainable Livelihoods Approach.

In the White Paper on International Development 1997, DFID outlined its commitment to poverty reduction through policies and actions which:

- Promote Sustainable Livelihoods
- Education, health and opportunities for the poor
- Protection and better management of the natural and physical environment

Box 1: The three dimensions of Sustainable Livelihoods

In sum, there are three dimensions to Sustainable Livelihoods (SL):

- an objective supporting the goal of poverty elimination
- a framework for thinking about poverty
- an approach for addressing poverty (the most important dimension)

SL is **NOT**:

- A panacea for poverty eradication
- A blueprint to guide implementation of programmes or projects targeting poverty.

From this policy objective of elimination of poverty, DFID has worked towards developing a conceptual and operational framework that constitutes the Sustainable Livelihoods approach. Promoting the Sustainable Livelihoods approach within current development thinking is seen as a means to address the ultimate target of poverty elimination. Many NGOs like Oxfam and Care have contributed to the development of the SL approach by taking it up at an early stage and providing critical feed back and suggestions based on their ideas and 'field' experiences.

Definition and Principles underlying the Sustainable Livelihoods approach

A livelihood comprises the capabilities, assets and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base (Carney, 1998).

In this context, poverty focused development activities should be:
People centred – the emphasis is on people, not on resources per se. It mainly focuses on people and livelihoods at the micro community level (e.g. coastal fishing communities) and at higher policy and planning levels (e.g. local government and central government).

Holistic – it is important to look at all the different resources, opportunities and constraints that people face in pursuing and improving their livelihood strategies.

Dynamic – It is important to recognise that livelihoods are changing in response to external shocks and trends, and it is necessary to understand these changes, how the people themselves perceive these changes and how they have adapted their livelihood strategies in response to these changes.

Building on strengths – **the approach starts with an analysis of strengths and resources rather than a list of needs.**

Linking macro-micro levels – Bridges gaps and makes explicit links, e.g. effects of national policies on local communities.

Conducted in partnership – with donors, local organisations like NGOs and government.

Sustainable – People should be able to deal with and respond to external shocks, hardships and trends, and not being (entirely) dependent on outside support. There are four different dimensions of sustainability that are interrelated:

a) economic - e.g. supply and demand for fish
b) institutional – e.g. a well functioning fish marketing chain, availability of credit and loan facilities
c) social – e.g. support from within the family and the community in general
d) environmental - e.g. fish stocks

Box 2: Summary of Sustainable Livelihoods approach's principles

What the approach emphasises:

- A people centred participatory and responsive approach to development
- Starting with positives (what people have) and opportunities (what they can make of it)
- Build on existing development approaches
- Micro to macro policy influencing

What the approach does not emphasise:

- Starting with sectors or commodities
- Starting with needs and problems
- Replacement of existing development approaches (but sets them in broader context)
- A focus only on local development

The Sustainable Livelihoods Framework

The Sustainable Livelihoods approach is a way to understand the needs of the poor and identify key opportunities that will ultimately benefit the poor. In order to understand and

analyse the lives of the poor, a Sustainable Livelihoods framework has been developed. It is important to note that it is not an ultimate blueprint. Its elements can be presented and applied in different ways (see Appendix).

SL embraces a wider approach to people's livelihoods by looking beyond income generation activities in which people engage. Through participatory approaches, it seeks to encourage various stakeholders, with their own perspectives, to engage in these discussions and debate about factors affecting their livelihoods.

Box 3: The key elements of the Sustainable Livelihoods framework

The key elements of the SL framework are:

- *Capital assets*: resources that help people survive and thrive (i.e. natural, social, human, physical and financial capital)
- *Vulnerability context*: things that the poor are vulnerable to
- *Policies, institutions and processes*: influence their livelihoods
- *Livelihood strategies*: how do people adapt and plan in response to threats and opportunities
- *Livelihood outcomes and aspirations*: what are people's objectives and priorities?

Capital assets

Capital assets are resources that help people survive and thrive. The main capital assets are natural, human, social, physical and financial capital (e.g. fishing skills, aquatic resources, social relations, access to credit, infrastructure, etc). Assets are important in terms of quantity and quality. In addition, the question is how do men and women access assets and what is the extent of their control, rights and security of access. Although it is not possible to define a 'minimum' level of assets needed for survival, as the categories are highly subjective and location specific, it is obvious that the better people's overall asset status is, the better they will be able to respond to changes and face hardships. A pentagon is sometimes used as a visual tool to present information about people's access to assets and the interrelationships.

Vulnerability

Next to an understanding of people's strengths and access to assets, it is important to understand the vulnerability context in which these assets exist. What are the external factors that influence the levels of assets and how these assets can be used? These external factors are often related to causes of poverty, which makes poor people, in particular, vulnerable. For many poor rural people, changes in natural capital can particularly affect their vulnerability, as they are heavily dependent on natural resources. Three major types of external factors can be recognised: trends, shocks and seasonality (e.g. declining fish stocks, price fluctuations, floods, etc).

Policies, institutions and processes

As mentioned earlier, one of the key principles of the Sustainable Livelihoods approach is the attempt to link micro and macro levels: the household/community level with processes as initiated by the government, the private sector and NGOs. There is a two way influence between assets and policies and institutions. Existence or lack of policies can have important effects on the livelihoods of the poor. Changes or transformations in these policies and institutions can be used to mitigate negative effects of trends on the overall asset status and cushion the impact of shocks and seasonality, thereby reducing people's vulnerability.

Rules of access to natural resources will influence people's access and control over natural capital. The marine fishery is considered as a common property, which means it is shared amongst those who fish it. A common problem associated with common property resources is 'the free rider' problem, as individuals benefit from use of the resources but do not bear the full opportunity costs of their use of common resources. In general, there is a tendency towards short-term gains rather than an attempt to manage the natural resources in a sustainable manner as benefits might be reaped by others who have not made any investment in such sustainable resource management efforts. Consequently, many marine fishing grounds are considered as being overexploited. Not only fishers will be negatively affected by loss of fish resources but also those involved in the marketing chain and many coastal families as they depend on fish as an important source of animal protein. Among policy makers there has been an increasing awareness for the need to devolve user rights to lower levels, such as communities, to encourage sustainable resource management.

Livelihood strategies

Livelihood strategies are the range of outcomes of how people combine and use their assets to make a living given the factors that make them vulnerable and the policy and institutional context within which they live. In the past, development efforts often sought to improve services and opportunities available to categories of people e.g. fisherfolk. However, the Sustainable Livelihoods approach seeks to develop an understanding of the factors behind people's choice of livelihood strategy and to reinforce the positive aspects and mitigate the constraints or negative influences. In sum, the Sustainable Livelihood approach seeks to identify ways how to build on the strengths the people have while at the same time trying to reduce the level of vulnerability.

References:

Carney, D. (Ed) (1998), Sustainable Rural Livelihoods: what contribution can we make?, papers presented at the Department for International Development's Natural Resources Advisers' Conference, July 1998, Department for International Development (DFID), UK

Chambers R. (1994) The Origins and Practice of Participatory Rural Appraisal, in World Development Vol. 22, No 7, pp953-969.

Holtzmann J. S. (no date), Rapid Appraisals of Commodity Subsectors, Abt Associates Inc. (located on World Bank website, 2002).

Marsland N., Wilson I., Abeyasekera S, and Kleih U. (2001) Combining quantitative and (formal) and qualitative (informal) survey methods. Socio-economic Methodologies for Natural Resources Research. Best Practice Guidelines. Chatham, UK: Natural Resources Institute.

Miles T. (no date), Agribusiness Subsector Assessments, Development Alternatives Inc. (located on World Bank website, 2002).

NRI (1996), Participatory Rural Appraisal – A Manual on Issues, Principles, and Tools; Unpublished document; Chatham, U.K.: Natural Resources Institute.

Oudwater, N. (2001) The Sustainable Livelihoods Approach and its Relevance for Fish Marketing; paper presented at the Workshop on "Poverty Alleviation and Livelihood Security Among the Coastal Fishing Communities – Market and Credit Access Issues", Chittagong, 27-28 March 2001.

Scarborough V. and Kydd J. (1992), Economic Analysis of Agricultural Markets: a Manual. Chatham, U.K.: Natural Resources Institute.

http://www.livelihoods.org

**Consultation Workshops on "Fish Distribution from Coastal Communities – Market and Credit Access Issues",
Chittagong, 22- 23 July 2002, and Dhaka, 25 July 2002.**

FISHING COMMUNITIES: CREDIT & GENDER ISSUES

**Dr. Mohammed Solaiman, , Professor, Department of Marketing,
University of Chittagong**

A preliminary version of this paper was presented at the workshops. The following paper represents the final document which was subsequently submitted by the author.

Fishing Communities: Credit & Gender Issues

Dr. Mohammed Solaiman
Award Holder
&
Professor of Marketing
University of Chittagong
Chittagong, Bangladesh
Email: rabbanee@ctgu.edu

Sponsored and Financed by 'Support for University Fisheries Education and Research', DFID-UK, SUFER Project, 4th Floor, University Grants Commission of Bangladesh, Agargaon, Dhaka-1207.

October, 2002

CONTENTS

2.2.4 Physical capital
2.2.4.1 Boats
2.2.4.2 Nets
2.2.4.3 Fishing gears
2.2.5 Financial capital
2.3 Vulnerability issues : focus on samples
2.3.1 Shocks
2.3.2 Trends
2.3.3 Seasonality

Chapter # 3 : Financial Services: Credit Access Issues
3.1 Credit services
3.2 Factors affecting institutional & non-institutional sources
3.2.1 Loan sanction procedure
3.2.2 Interest rate

3.3 Uses of credit
3.3.1 Loan repayment procedure
3.3.2 Size of loan
3.4 Preference of sources of loan
3.4.1 Amount of loan taken from various sources
3.4.2 Rate of interest
3.4.3 Reasons for preferring non-institutional loans
3.4.4 Reasons for preferring institutional loans

Chapter # 4 : Institutional Credit : Access of Fishermen
4.1 Credit required for fisher folk
4.2 Utilization of credit money
4.3 Problems in getting credit
4.3.1 Nature of problems
4.3.2 Suggestions to overcome problems in getting credit
4.3.3 Expectation about credit repayment
4.3.4 Present conditions of credit receivers
4.3.5 Expectation of terms in getting credit
4.4 Demand for other financial services
4.4.1 Knowledge of social insurance scheme
4.4.2 Latent demand of social insurance scheme

Acknowledgement

The study was sponsored and financed by DFID-UK, SUFER Project, Dhaka. I am grateful to the authority concerned for granting me fund under the mentioned scheme. SUFER Project Dhaka deserves special thanks for their cooperation in the various stages of this research work. I would like to acknowledge the appreciation and assistance rendered to me by Dr. Khurshid Alam, Mr. Gupta, Mr. Dastidar and other our colleagues of CODEC. I received intellectual and academic guidance from Dr. Ulrich Kleih in this research program. I like to express my gratitude to him. I also remember with gratitude the sincere cooperation of my research associates and all sample respondents who helped me in getting necessary data during field survey.

Glossary

CODEC	Community Development Centre, Chittagong
DFID	UK Department for International Development
GOB	Government of Bangladesh
DOF	Department of Fisheries
NGO	Non-Governmental Organisation
NRI	Natural Resources Institute, University of Greenwich, UK
PHFRP	DFID Post-Harvest Fisheries Research Programme
SUFER	Support for University Fisheries Education and Research, DFID funded project based in Dhaka
UOC	University of Chittagong
SL	Sustainable Livelihoods

Executive Summary

The present research examines the functioning of the credit system and the gender roles in coastal fisher communities and offer recommendations for improving the livelihoods of poor participants in the fish commodity chain. The study has been conducted to six coastal fishermen villages of Bangladesh. The reason behind for selecting these villages are based on the consideration that it will fully represent the picture of coastal fishing community of Bangladesh and be homogenous in terms of social, economical, political and other external environment. The research areas, survey techniques and channel of dissemination of research findings have been finalized as an output of March 27 –28, 2001 workshop at Caritus Auditorium, Chittagong. According to the decision of the workshop, the university departments conducted quantitative research and other partners of the project viz., NRI and CODEC conducted qualitative research. The technique of stratified sampling method was used to select the sample respondents. The study covered a total of 300 households in which one male and one female member were interviewed by questionnaire technique. Credit provider's and trader's behaviors were observed through day-to-day participation observation, focus group discussions and case study. SPSS programming (10.0 version) of computer has been used in the analyses of collected data. Different statistical techniques like averages, dispersion, ANOVA test were also used to make the study more informative, analytical, useful and interesting to the interest groups.

The research focuses the core elements covering capital assets and vulnerable issues viz., shocks, trends and seasonality of the sustainable livelihood approach. Capital assets for livelihood include human, social, physical, financial and natural capital. Human capital includes knowledge, skills, ability to labor and good health, which may be utilized for their better livelihoods. It is the core of all other four types of assets. For the better management of livelihood of a fishermen, he needs to know the potential location of fishing grounds, mode of operation of boats in odd climate, market chain, financial environment etc. Human capital components like education level, age structure and sex have been analyzed in the light of survey results. The mean years of education level of head of male household is 2.28 where it is 1.48 in the case of female. The mean age of male respondent is 25.8 years where it is 23.0 years in the case of female. The sex ratio of sample household members is 118.8: 100. Again, ANOVA test shows that the respondent's education is significantly different by districts. Natural capital includes, land, water and the likes. Further, caste systems affect the livelihood of the people. The survey data evidence that 14% of the respondents have no land and homestead even. It has been reported that 69.67% of the respondents have access in water resources whereas the rest 30.33% have no access in water resources. Again, 65% of the respondents affected by caste system where as the rest 45% are not affected by it. The survey portrays that 60% respondents have fishing equipments like gears, sables etc. Further, 43% of the sample respondents pointed out that they have not boats. As a result, they are working as the daily labour and catching fish in the sea. The study evidences that the share of non-institutional and institutional credits are 78.67% and 20.33% respectively. A query as to the sources of non-institutional loan, it was found that 'dadandar' ranked the highest (52.67%), followed by relatives (21.3%), friends (2.6%) and goldsmith (2.6%). The survey result portrays that among the sample respondents 24% 21.3%, 17.9%, 17.4%, 14% and 4.4% have taken loan amount in thousand Tk. viz., '2.1- 4', '6.1-10', '10.1-50',

'4.1-6', 2 <' and '50.1 and above' respectively. Again, among the respondents the highest number of loanee paid rate of interest per month is Tk. '5.1-10.0' where as the lowest percentage paid in Tk. '20 +'. The sample respondents expectation of terms in getting credit are related collateral conditions 83.3%, flexibility in credit repayment 41.7%, credit amount as required by fishermen 27.3%, market price of interest 29.3%, free from any speed money 6% and other 12%. The respondents opined that the reasons for not savings are 'low income/high expenses (45.3%) 'no other sources of income' (14.3%), 'high interest rate' (13.7%, 'less catches receiving lower prices (6%), 'large family maintenance (3.4%) and others (3.3%) respectively. The sample respondents expect package of assistance from bank. Reportedly, 'advancing loan through easier procedures' (57.3%), 'offering collateral free loan (48.3%), 'providing timely information about different loan schemes' (52.7%), 'training for orientation to savings' (23%) and others (9%) are the various kinds of assistances that are expected from the banks by the respondents of the study areas. The survey results show that among the various types of assistances expected from NGOs, the important ones are 'creation of income generating sources (64%), supervision and training with fund (52.3%), 'supply of fishing equipment' 34.7%), technical assistance from NGO (9.7%) and others (5%). Main problems in coastal fishermen communities have been identified to be the 'absence of credit facilities, lack of sea security, piracy/ hijacking/robbery, lack of education /wealth/ transport facility, low fish catching, exploitative pricing, virus in fish and polluted sea water in the study areas. The study attempts to link between micro and macro levels, viz. government, non-government organizations, 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.

Chapter # 1 : Approach of the Study

1.1 Background

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).

Again, from the dawn of the civilization, women played a complementary role to men to achieve all success of mankind. Article 28(2) of the constitution of Bangladesh emphasizes that women shall have equal rights in all spheres of state and of public life (Chowdhury 1994). But in Bangladesh, it has been identified in the different Five year Plans that women have remained outside the main stream of development activities (GOB 1994). Further, thousands of coastal women communities continued to suffer from poverty, illiteracy and unemployment. But, it appears that coastal women fishing communities are considered to suffer from lack of access to fair credit sources. Some of the poorest people in Bangladesh live in coastal fishing communities which are culturally and economically marginalized and have often little or no voice in local government bodies such as Thanas. Institutional and financial access is further constrained as poor fisher-folk require larger loans (i. e. for the purchase of boats or fishing gear) and are considered a high risk by lending institutions, including Government, banks, and NGOs. As a consequence, they are more likely to depend on informal possibly exploitative, credit sources, whereby fish-buyers also act as money lenders (i.e. dadandar system).

Women play an important role in the processing and marketing of fish, however, they are limited in their marketing opportunities and access to credit. Loans tend to be given to (male) boat owners, who then have to sell an important part of their catch to the provider of the credit. The interdependency between trade and finance means that women can only access credit through their husbands or other male relatives.

At the same time, it is acknowledged that there is a lack of understanding of how the credit system in coastal fishing communities is organized. An improved understanding of

the credit system appears necessary before recommendations for improving the livelihoods of poor participants in the fish commodity chain can be made.

1.2 Literature Review

A number of study was found to have been conducted over various aspects of this sector at my University or elsewhere in the subject area. But study on "Fishing communities: Credit and Gender Issues" seems to have attracted little attention embracing various relevant aspects of credit and gender. The discussions made below will clearly support this assumption.

Rahman and Chowdhury (1998) examined national fisheries policy of Bangladesh and critically evaluated the existing fisheries acts and ordinances, such as "The East Bengal Production and Conservation Fish Act, 1950', Marine Fisheries Rule 1983, 'Shrimp Culture Rule' 1993. They pointed out many causes of fisheries of depletion, viz. Lack of understanding of the ecological principles, absence of institutional capacity and coordination in integral planning, natural renewable resource management and non care for the environment.

Haque and Blowfield (1997) in their research used participatory approach to study coastal fishing communities in Bangladesh to identify possible interventions. They covered two stu;dy areas Hatia Island (Chittagong) and Pakhain para (Cox's Bazar). They studied outstanding loans to dadandar as well as credit flow to the communities and linked it to the ladder of economic progress in coastal fishing communities.

Blowfield and Kamila (n.d.) studied on credit services, women and empowerment in coastal fishing communities. They compare the credit behaviors and other relevant characteristics of gender and empowerment issues through case studies between Tamil Nadu, India and Bangladesh.

Benett (1991) examined socio – economic aspects of estuarine set bag net fisheries. They suggested that efforts to build-up institutions promoting self-help and building confidence among the communities would go a long way to solve the socio-economic problems of the communities.

Huq and Huq of Bangladesh (1985) studied socio-dernographic characteristics; occupational features; patterns of employment; and assets, income and other determinants, such as fishing and non-fishing assets, fishing and non-fishing employment, location and marketing advantages, composition of catch, opportunities for non fishing employment etc.

Yater and Esporlas (1982) examined the pricing efficiency and related economic aspects of fish processing and marketing in two communities of San Miguel Bay, Philippines. Salting, dried fish processing and marketing were in their study covered. Finally they agreed that improvement of the processing and marketing system of fisheries in these communities lies in group activities.

The review of the early works in same subject area in Bangladesh and elsewhere revealed that women in credit as a whole or various aspects of credit in context of poor coastal

women fish farmers was not examined in detail through research studies. This research gap induced the present researcher to undertake this study on 'Fishing Communities: Credit and Gender Issues.'

1.3 Purpose

The purpose of the research is to describe and understand the functioning of the credit system and the gender roles in coastal fisher communities and to develop recommendations for improving the livelihoods of poor participants in the fish commodity chain. In the light of this main purpose, the specific purposes of the study are as follows:

- Focus on credit and gender issues of coastal fisher communities;
- Examine the existing credit operational practices in marine fisheries sector at the different levels in the distribution chain;
- Identify constraints with these existing practices and point-out credit related problems of fishers and fisher communities;
- Identify opportunities to empower fisher communities;
- Identify appropriate savings and credit services and assess access to alternative credit systems and utilization of loans by fisher-folk including small scale traders;
- Develop recommendations to be implemented by Government, NGO, the private sector and donor organizations.

1.4 Research Methodology

The Background proposal of present research project was initiated in its first meeting at CODEC head office, Nasirabad, Chittagong on January 30, 2001. Dr. Khurshid Alam, Executive Director of CODEC welcome the participants in the meeting. Mr John Sanchez of NRIL Ltd, Mr. Ulrich Kleih of NRI, and Mr Alan Marriot talked about the importance and rationality of the research problem. Professor Sekandar Khan, Department of Economics and Dr. Mohammed Solaiman, Department of Marketing, Chittagong University spoke in the meeting on proposed research project titled "Fish Distribution from Coastal Communities – Market and Credit Access Issues". Again, another workshop was held on March 27-28, 2001 at Caritus Auditorium, Hill View Housing Society, Chittagong. In the mean time, British Department for International Development (DFID) approved the project for funding and mainly three issues were discussed at that workshop. These are jointly prioritize research areas, design survey techniques and identify channel of dissemination of research outputs. It has been decided that the University departments will conduct quantitative research where NRI as well as CODEC will conduct qualitative research. NRI, CODEC and two Departments viz. Marketing Department and Sociology Department of the Chittagong University will carry out research. University Departments will receive funds from SUFER Project, Dhaka. From the Marketing Department Professor A. N. M Nurul Karim would concentrate on the analysis of the marketing system, Dr. Mohammed Solaiman would focus primarily on credit access issues and Dr. Iftekhar on sociological aspects related to fishing marketing from coastal communities. It is intended that the research findings will feed into a research project entitled "Distribution of Fish from Coastal Communities Market and Credit Access Issues" which is funded by DFID's post Harvest fisheries programme.

1.4.1 Desk Study

Theoretical aspects of subject related to understanding financial products, such as concept of credit, credit market, formal and informal markets, components of different markets, linkage of credit with saving, investment, unemployment, poverty, gender issues, livelihood approach and its elements, pricing of credit and savings, interest rate, market price, supply and demand behavior of credit and savings etc. Particular study based on the above pertaining to Bangladesh covering natural resources viz. renewable and non-renewable, marketing of financial services, profile of the institutional and non-institutional financial bodies like Banks, NGOs, moneylenders, dadandars, problems, opportunities in the process of taking financial services were covered through desk study.

1.4.2 Secondary Data

Secondary data required for the study were collected from the directorate of fisheries, Ministry of Fisheries, Government of Bangladesh, Regional Fisheries office at Chittagong and Institute of Marine fisheries, 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. Further, different publications and documents of various national and international organizations. Like CODEC, NRI, DFID were consulted for build-up theoretical framework of the study. For perusal of existing literature on the topic, the researcher visited different libraries in Bangladesh. The researcher participated and presented a research paper in AMDISA Seminar at Maldives in April, 2002. The livelihood of the majority people of Maldives depend on fisheries and seminar participation of the researchers open-up opportunities to go through the theoretical development on the subject and collect relevant information from the same. Secondary data were collected with reference to requirements of the study.

1.4.3 Selection of Study Areas

The present study has been confined to six coastal fishermen villages of Bangladesh. Among the six villages, four are Muslims where as Hindu villages are two also. The mapping of the study areas have been conducted by the CODEC with the consultation of Dr. Kleih who is the project leader and representative of NRI (Natural Resource Institute, Greenwich University, U.K.).

The reason behind for selecting these villages are based on the consideration that it will fully represent the picture of coastal fishing community of Bangladesh and be homogeneous in terms of social, economical, political and other external environment. Table – 1 shows the break-up of sample villages. For control purpose, villages like Kumira (Chittagong), and Munshigonj (Satkhira) were covered.

Table 1 : Break –up of Sample Villages

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

1.4.4 Field Study

Intensive study of published documents and reports was the first step in collection of needed data. This was followed by a series of structured interviews using quantitative research technique like designed questionnaire. The procedure of collecting secondary and primary data is described below:

1.4.5 Selection and Training of Field Investigators

A team of consisting of four investigators were selected from the Department of Marketing, Chittagong University to collect the data and information. One junior teacher of the same department was selected to act as co-investigator of this research project. They were trained at CODEC Training Centre (CTC), Isha Nogar, Patiya, Chittagong during the period of July 6-9, 2001 about the basic idea and main theme of the project. Dr. P. K. Matiur Rahaman, Professor of Institute of Statistical Research and Training, Dhaka University and Mr. Joachim Victor Gomes, an international expert on research methodology (contacted by CODEC) were the resource persons of the training program. They trained up the trainees about the field conditions, interaction with villagers, interview techniques, coding and designing of questionnaire to get the data collected and entered. On the third day of training program, Dr. Rahman and Mr. Gomes along with trainees visited one sample village to gather practical knowledge regarding data collection through questionnaire technique by interview method.

In addition, the field investigators were guided and assisted by two experienced field workers. The trained and experienced research team of the project worked under the direct guidance and supervision of the researcher.

1.4.6 Quantitative Research: Questionnaire Technique

The main survey instrument i.e. draft questionnaire was modified by the two resource persons during the training period of selected field investigators. The draft questionnaire was used as the dummy mode of demonstration for enhancing skill of investigators of data collection by questionnaire method. Again, Ms. Nickoline of NRI reviewed the Questionnaire and offered her valuable suggestions for improvement of draft questionnaire. These suggestions were duly incorporated in the questionnaire and later on it was sent for her approval. After her approval, a pilot survey was conducted in our one study areas Salimpur village in the district of Chittagong in order to know the technical details and conditions of the target sample respondents. The co-investigator, four investigators were participated in the pilot survey under the supervision of the researcher. This pilot survey was conducted during the period of September 21-30, 2001. They also

collected necessary data through day to day observation, participation and group discussion. In the light of the results of pilot survey, the questionnaires were finalized for collecting detailed data of the research project. The questionnaire was designed with two main characteristics viz., open ended and close ended according to the nature of information. For instance, questions regarding procedures and method of different aspects of credit issues were close ended based on literature survey and pilot survey. This was done to facilitate data analysis work. Some other questions were kept open ended where opinion was sought and the respondents have something to tell from his experience. This was done to give scope to the respondents to express themselves freely.

1.4.7 Respondents

The technique of stratified sampling method was used to select the sample respondents. The study covered a total of 300 households in which one male and one female member were interviewed by questionnaire technique. Credit providers and traders behavior were observed through day to day participation, observation, focus group discussion and case study. Before going to interview phase with the respondents, they were briefed about the importance of the study and were convinced about the cooperation in data collection process. Moreover, during the course of field investigation, the researcher recorded in his note book the findings revealed through personal observation and free discussions. It is to be noted that researcher got sincere cooperation in most of the cases. Direct participation helped the researcher to get valid information about credit issues and gender roles relevant to the target group. Table 2 shows study areas, period and investigators involvement in data collection in appendix.

Table 2: Shows Study Areas, Period and Investigators Involved in Data Collection

Study Areas		Period of Data Collection	People Involved in Data Collection
District	Village		
Cox's Bazer	Kuruskhul	November 10-24, 2001	Co-investigator: 15 days Four investigators: 15 days Two experienced field workers: 15 days Researcher: 3 days
Chittagong	Salimpur	December 1-15, 2001	Co-investigator: 15 days Four investigators: 15 days Two experienced field workers: 1 month Researcher: 9 days
Patuakhali	Kuakata	January 1-10, 2002	Co-investigator: 10 days Four investigators: 10 days Two experienced field workers: 10 days Researcher: 10 days
Patuakhali	Lebokhali	January 11-20, 2002	Co-investigator: 10 days Four investigators: 10 days Two experienced field workers: 10 days Researcher: 10 days
Bagerhat	Debraj	January 21-30, 2002	Co-investigator: 10 days Four investigators: 10 days Two experienced field workers: 10 days Researcher: 10 days
Satkhira	Kullahpara	February 1-20, 2002	Co-investigator: 20 days Four investigators: 20 days Two experienced field workers: 1 month Researcher: 3 days

1.4.8 Compilation and Tabulation of the Data

From January, 2002, the data entry work started and in the month of March, 2002, the collected data were compiled, tabulated and checked for internal consistency. There after, editing and coding were made as per research objectives. In this process, some data gaps were identified. Thus, the experienced field workers again visited study areas during the period of April-May, 2002 to mitigate the data gap and validate the preliminary survey results. Data collected were analyzed to prepare this research report.

1.4.9 Mode of Analysis

SPSS programming (10.0 version) of computer has been used for the analysis of data. Collected data were analyzed through the use of various financial management tools like ratio analysis, percentages etc. Different statistical techniques viz. averages, dispersion, tables, graphs, ANOVA test, chi-square test were also used to make the study more informative, analytical, useful and interesting to the interest groups.

1.5 Limitation of the Study

A study of such nature need to cover all fishing villages that would have been useful to understand what prevents them from living better livelihoods based on fishery resources. This

might have positive impact on the representative character of the study and it would provide useful input data for policy makers in designing various programs in order to ensure better futures for fishing communities. However, even with this limited scope it is hoped that the study will be able through some lights on 'Credit and gender issues' in coastal communities in particular and Bangladesh in general.

Chapter # 2: Livelihoods System: Coastal Fishermen

2.1 Coastal Livelihoods System

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 (Alam and Thompson 2001) 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 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 & Choudhury 1998). 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.

2.2 Livelihoods

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. Capital assets for livelihood includes 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.

2.2.1 Human Capital

Human capital includes knowledge, skills, ability to labor and good health which may be utilized for their better livelihoods. Thus, components of human capital are skills, knowledge, ability to labour, good health and the likes. It is the core of all other four types of assets. For the better management of livelihood of a fishermen, 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. These knowledge may be indigenous and skills will be developed through experiences.

2.2.1.1 Education Status: Focusing Gender Issues

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 ones socio-economic position in the society. Data collected in this regard have been shown in Table 3.

Table 3: Educational characteristics focusing gender issues

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

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. In such context, we were interested to know from the sample respondents about education level of family head and wife of the respondents. Table- 4 shows the data thus collected.

Table – 4 : Education level of family head & wife of the respondents

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
2nd quartile		0	0
3rd quartile		5	3

Table –4 shows the mean year of education level of head of male household is 2.28 where it is 1.48 in the case of wife. 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. At this stage, we were interested to test the equality of means of respondents' education by caste. Table-5 shows the data in this regard.

Table 5 : ANOVA table for testing equality of means of respondents education by caste

Item	Sum of squares	Df	Mean square	F	Significance
Between groups	53.672	1	53.672	5.689	.018
Within groups	2792.651	296	9.435		
Total	2446.322	297			

Table 5 shows that the respondents' education level does not significantly differ by caste in study areas. Again, ANOVA test has been used for testing equality of means of respondent's wife's education by caste. Table 6 shows the data in this context.

Table 6 : ANOVA test has been used for testing equality of means of respondent's wife's education by caste

Item	Sum of squares	Df	Mean square	F	Significance
Between groups	80.508	1	80.508	12.866	.000
Within groups	1633.163	261	6.257		
Total	1713.673	262			

The table shows that the education of respondent's wife is significantly different by caste. Again, the equality of means of respondent's education by districts has been examined by ANOVA test in Table 7.

Table 7 : ANOVA table for testing equality of means of respondents education by districts

ITEM	Sum of squares	Df	Mean square	F	Significance
Between groups	176.536	4	44.134	4.844	.001
Within groups	2669.786	293	9.112		
Total	2446.322	297			

Table 7 shows that the respondents' education is significantly different by districts. Admittedly, education is a powerful instrument to institute community involvement in the process of socio- economic development meaningful, committed and accountable to people welfare.

2.2.1.2 Age Structure : Male and Female

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 has been shown in Table 8 by age structure.

Table 8: Distribution of sample population by age

Age group	Percent (grand)	Chittagong	Cox's Bazar	Bagerhat	Putuakhali (Kuakata)	Putuakhali 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	25.1	25.8	23.0
Median age	24.0	24.7	21.5

The survey data evidence that the mean and median age of total population are 25.1 and 24 years respectively. The median age group of male population is 24.7 years where it is 21.5 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.

Table 9: ANOVA table for testing equality of means of respondents age by caste

	Sum of squares	Df	Mean square	F	Significance
Between groups	728.5	1	728.5	4.961	.027
Within groups	43759.296	298	146.843		
Total	44487.797	299			

Table – 9 reveals that the means of respondents age is not significantly different by caste.

Table 10 : ANOVA table for testing equality of means of respondent's wife's age by caste.

	Sum of squares	Df	Mean square	F	Significance
Between groups	1109.147	1	1109.147	11.655	.001
Within groups	24361.8	256	96.163		
Total	25470.977	257			

Table – 10 shows that the means of respondent's wife's age is significantly different by caste.

Table 11 : ANOVA table for testing equality of means by districts (Age of the respondents).

	Sum of squares	Df	Mean square	F	Significance
Between groups	1750.461	4	437.615	3.021	.018
Within groups	42737.336	295	144.872		
Total	44487.797	299			

Table- 11 shows that the means of respondent's age is not significantly different by districts.

Table 12 : ANOVA table for testing equality of means by districts (Respondent's wife's age).

	Sum of squares	Df	Mean square	F	Significance
Between groups	2332.305	4	583.076	6.375	000
Within groups	23138.672	253	91.457		
Total	25470.977	257			

Table- 12 shows that the means of respondent's wife's age is significantly different by districts.

2.2.1.3 Sex Ratio: Women Involvement

There are substantial demographics changes tacking places in the society that have resulted in a blurring of traditional sea roles. (Kinnear And 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 quieting different. But at present the nature of this role is gradually changing. More 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 13: 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 13 portrays that the sea 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 guarantee sustained and adequate incomes for the women, thus, it becomes the key to poverty. 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. 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.

2.2.2 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 a various types of natural resources for pursuing their livelihood.

2.2.2.1 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 14 shows that 14.3% of the respondents have no land and homestead even.

Table 14: Distribution of Sample Respondents by Land

Land access	Number	Percent
Yes	258	85.7
No	42	14.3
Total	300	100%

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 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 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.

2.2.2.2 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 15 Distribution of Samples 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%

Table –15 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.

2.2.2.3 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 and 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 were interested to know from the respondents regarding their opinions about the impact of the caste system. The collected data in this regard have been shown in Table – 16

Table 16: Distribution of Sample Respondents based on Caste

Are You Affected by Caste System	Number of Sample Respondents	Frequency in Percentage
Yes	160	60%
No	140	40%
Total	300	100%

The table shows that 160 (60%) out of 100 (100%) fishermen are affected by caste system where as the rest 140 (40%) are not affected by it. Among the samples, 100 fishers 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).

2.2.3 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.

2.2.3.1 Marital Status

Marital process is a way to establish linkages among different families. Further, family background is an enabling factors since the bundle of skills, experiences and training necessary to sense, view, evaluate and exploit given opportunity from family circle free of cost easily, quick by and without undergoing exploitative apprenticeship system (Chowdhury, 1988). 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 relative's of husband family. The survey result shows that the percentage of marital status of household members is 57% (Table 17).

Table 17 : Marital Status of Household Members

Marital Status	Number of Sample Respondents	Frequency in Percentage
Unmarried	63	21%
Married	171	57%
Widow	15	5%
Divorced	51	17%
Total	300	100%

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.

2.2.3.1 Family Size

Family 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 18).

Table 18: Family size distribution

Family size	No of families	Percent
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

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.

Table 19: ANOVA table for testing equality of means of family size by districts

	Sum of squares	Df	Mean square	F	Significant
Between groups	21.998	4	5.50	.848	.496
Within groups	1914.039	295	6.488		
Total	1936.037	299			

Table – 19 shows that the means of family size is not significantly different by districts.

Table 20: ANOVA table for testing equality of means of family size by casts

	Sum of squares	Df	Mean square	F	Sig
Between groups	2.393	1	2.393	.369	.544
Within groups	1933.644	298	6.489		
Total	1936.037	299			

Table – 20 shows that the means of family size is not significantly different by casts.

2.2.3.3 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 resources center to obtain different types facilities for the better livelihood of sample respondents. Data collected in this regard have been shown in Table –21.

Table 21: 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%

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).

2.2.3.4 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 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-22.

Table 22: Opinion of the Respondents Regarding the Existence of Fishermen Association

Response	Cox's Bazar (Hatkhola)	Chittagong (Salimpur)	Patuakhali (Kuakata)	Patuakhli (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 fishermen in Cox's Bazar, 2 in Chittagong, 15 in Patuakhli (Kuakata), 11 in Patuakhali (Lebukhali), 8 in Bagerhat and 21 in Satkhira abstained in answering this question.

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 that 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-23.

Table 23: Whether Sample Fishermen Belong to the Association

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

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 association. The survey data have been shown in Table 24.

Table 24: Fishermen's Comment About Whether the Association is Beneficial to Him

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

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 paves the way towards social, economic and political empowerment of the coastal communities.

2.2.4 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.

2.2.4.1 Boats

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 25.

Table 25: 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.%
Total	300	100%

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.

2.2.4.2 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 shown in Table 26.

Table 26: Nets Owned by Sample Respondents

Number of Nets Owned	Number of Sample Respondents	Frequency in Percentage
1-2	120	40%
3-6	28	9.3%
7-10	18	6%
11 and above	23	7.7%
No net	111	37%
Total	300	100%

It reveals that 40%, 9.3, 7.7 and 6% 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.

2.2.4.3 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 – 27.

Table 27: Fishing Equipments (Fishing Gears) of Sample Respondents

Fishing Equipments	Number of Sample Respondents	Frequency in Percentage
Yes	180	60%
No	120	40%
Total	300	100%

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.

2.2.5 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 28).

Table 28: Institutional and Non-institutional Loan

Sources	Number of Sample Respondents	Frequency in Percentage
Non-Institutional	205	68.4%
Institutional	68	22.6%
Not enjoyed the loan	27	9%
Total	300	100%

Again, as to the relative importance of the sources of non-institutional credits, 'dadandar' topped the list closely followed by relatives, friends and goldsmith. Among the institutional sources, NGO's ranked the highest, bank ranked the second and samity ranked the third. Thus, by supplying credit, dadandar dominates in fish distribution system where as poor fishermen have no voice in selling of their produces. As a result, they are deprived in getting fair prices of their produces.

2.3 Vulnerability Issues : Focus on Samples

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.

2.3.1 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 gears, 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.

2.3.2 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, habitual 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 market for rich fishermen. Again, it has been reported that big business merchants have emerged in the sea with high technology. 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 catching, drying, salting and smoking.

2.3.3 Seasonality

Seasonality influence 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 only the mode of employment of the people of the coastal areas. In rainy season, fresh fish marketing is hindered due to lack of effective road and communication system. Again, sun drying of fishes is not possible in the rainy season. Further, hilsha is a seasonal product and its harvesting continues from mid July to mid November. Fishermen villages are crowded by interested groups like dandondar, bepari, faria, and other interest groups during this period. But poor fishermen can not earn more due to limited capacity of their equipments. So, the seasonality adversely affects the livelihood of the poor fishermen.

The above analyses show 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 net works. 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 go out of poverty. 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. With these analyses of capital assets of the sample respondents in the study areas, following discussions deal with credit and gender issues which are assumed much talked-about agenda for poverty alleviation on sample fishing communities.

Chapter # 3 Financial Services: Credit Access Issues

3.1 Credit Services

Rural financial market in Bangladesh is composed of two parts – institutional and non-institutional. The most significant feature of the market is that an overwhelming portion of the credit in this market is supplied by the informal sources. It is estimated that out of the total credit supply, about 85% comes from the non-institutional market and 15% from institutional sources. (Ahmed 1983). Further, it is estimated that only 38% demand for credit was fulfilled by the formal credit giving agencies (Maloney & Ahmed 1988). The coverage of formal sector is skewed towards rich farmer, village leaders, elite and the likes. The rural financial market found to be significantly dominated by informal sources and rural people have been suffering in the form of credit scarcity from formal market and high cost of credit from informal market. This is truer in the case of coastal fishing communities of Bangladesh.

3.2 Factors Affecting Non-institutional and Institutional Sources

In credit access issues, some important factors affecting non-institutional and institutional credits are worth mentioning. Among of the main factors affecting non-institutional sources the followings have been reported to be the major ones.

3.2.1 Loan Sanction Procedure

One of the important features of the informal lending is that there is no formality in getting loan. The poor coastal fisher folk approach 'dadandars' for the required loan amount. The agents on behalf of 'dadandars' provide the necessary loans to the fishing communities in the study areas. The loanee is known as 'Bahaddars' or 'Majhi' who takes loan from the 'dadandar'. After receiving the loan, the 'bahaddar' provides it to their crews. The 'dadandars' with the records of past dealing of 'bahaddars' and also through their personal observation agree to lend money to the 'bahaddars'. It is assumed that the 'bahaddar' would sell all the catches to the 'dadandar' and the price will be determined by the 'dadandar' himself.

In the case of institutional loan, a lengthy procedure is involved. Application is to be made in prescribed form along with necessary documents. It needs the identification and recommendation from the local leaders of the fishing community. As to the formal rural credit, the general allegation is that the procedure of getting loan is cumbersome, lengthy and clumsy; and the findings of the study correspond to the allegation. It is seen that all the financial institutions have their own plans and program for advancing loans. They have set rules as to mode of lending and a definite program as to the purpose to which loans will be advanced. These need formal investigation, judging credit worthiness and the like, which require more time to sanction loan.

3.2.2 Interest Rate

The interest rate of 'dadandar' varies from 120 – 240% per annum. But the rate of interest of loan of institutional sources was found to vary from 12% - 18% depending on

the nature of credit. In most cases the fishermen have to handover all of their catches to the 'dadandar' upto 50% of the market price of their produces.

3.3 Uses of Credit

It is reported that the 'dadandar' is not very much interested as to the use of credit. They are satisfied if the recovery is made in time. But, in the case of formal sources, the loan providing institution gives due importance as to use of credit by the borrowers.

3.3.1 Loan Repayment Procedure

In the case of 'dadan' system, if a loan is not repaid in one season, it is carried over to the next season. Reportedly, all the catches of 'bahaddar' will be hand over to the 'dadandars'.

3.3.2 Size of Loan

In the coastal fishing community, it appears that the 'dadandar' is ready to provide any size of loan to the fishermen. In study areas, it has been reported by the sample fishermen that the 'dadandar' will provide any size of loan when fishermen is agreed to handover all the catches of a particular season to him.

The above analyses evidence that the poor coastal fishing community have been deprived by the well established moneylender through 'dadan' system. They exploit the fishing communities by charging exorbitant interest on their loan as well as establishing monopoly market in buying and selling process of catches in study areas. Thus, the poor fishermen have no participation in marketing of their produces. It appears that this exploitative marketing cum-lending system deprives the poor fishermen in getting fair prices of their produces. As a result, they are becoming poor to poorer gradually. In such background we were interested to know the sources of credit from the sample respondents.

3.4 Preferences of Sources of Loan

The components of non-institutional financial market have dominated rural financial market. Among the non-institutional components, 'dadandar' play a significant role in providing financial services to the coastal fishing community. Further, we were interested to know about the attitude of sample respondents towards the different sources of loan. A further query as to the preference among the sources, it was found that 'relatives' ranked the highest (45.7%) followed by 'dadandar' (34%), 'Bank' (20.7%), 'NGO' (12%), 'Samity' (12%)(Table 29).

Table 29 : Loan source

Sources	Number of sample Respondents	Frequency in Percentage
Informal Source:		
- Relatives	64	21.3%
- Friends	16	5.4%
- Mahazan	48	16.0%
- New demander	16	5.4%
- Old Dadandar	21	7.0%
- Paikar	24	8.0%
- Goldsmith	16	5.3%
a) Total (Non-Institutional	205	
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	100.00%

It appears that though they prefer relatives as their sources of loan, the relatives position do not support to give the loan to their loanee relatives. Again, among the institutional sources they prefer bank as a source of loan instead of NGO and other sources. In such context we were interested to know the amount of loan taking by sample respondents from various sources.

3.4.1 Amount of Loan Taken From Various Sources

Loan is taken for meeting the various purposes of sample respondents. The survey result portrays that among the sample respondents 24%, 21.3%, 17.9%, 17.4% 14% and 4.4% have taken loan amount in thousand taka viz. '2.1 – 4', '6.1 – 10', '10.1- 50', '4.1- 6', '2<' and '50.1 and above' respectively (Table 30).

Table 30: Amount of loan taken from various sources

Loan amount (thousand) Tk.	Percent loaner
<2	14.0
2.1-4	24.0
4.1-6.0	17.4
6.1-10.0	21.3
10.1-50.0	17.9
50.1 and above	4.5

Now we are interested to know the rate of interest on loan money from the respondents.

3.4.2 Rate of Interest

The survey reveals that the range of rate of interest paid per month by the respondents varied from taka 20 + at the highest to taka <2 at the lowest. Again, among the respondents the highest number of loanee paid rate of interest per month is at Tk. '5.1 – 10.0' whereas the lowest percentage paid in Tk. 20 +(Table 31).

Table 31 : Rate of interest paid

Rate of interest paid per month	Percent
<2	10.1
2.1-5	20.3
5.1-10.0	26.6
10.1-15.0	20.3
15.1-20	13.3
20+	9.4

As to query they opined that dadandar rate of interest is the highest among the various sources of loan. In such background, we were interested to know from them regarding their preferring non- institutional sources of loans.

3.4.3 Reasons for Preferring Non-institutional Loans

In this connection we asked our samples to give their opinion as reasons for preferring non-institutional sources particularly dadandar system. Their responses have corroborated that 'easy to access' ranked the highest (71.71%), 'no collateral' ranked the second (60.6%), 'no formalities are required' ranked the 3rd (39%), 'on stipulated repayment date' ranked the 4th (27%) and others ranked the 5th (10%) in order of magnitude(Table 32).

Table 32 : Reasons for preferring Non-institutional Loans

Reasons	Number (300)	percent
Easy to access	215	71.7
No formalities are required	117	39.0
No collaterals	182	60.6
No stipulated repayment	81	27.0
Others	30	10.0

N.B. Respondents mentioned more than one reason.

It has been observed that preference of market segment based on mainly two factors viz. easy access as well as no requirement of collateral. In this situation, our query was also to identify the reason for preferring institutional sources.

3.4.4 Reasons for Preferring Institutional Sources

The survey data show the reasons for preferring institutional sources by the sample respondents. These are 'non-exploitation by dadandar', 'low rate of interest', and 'possibility of getting exemption' for loan money and interest on it by the authority concerned. The respondents, opined that 'fee from exploitation' ranked the highest

(28.7%), 'low rate of interest' ranked the 2nd (22.7%) and possibility of getting exemption for repayment of loan and interest ranked the 3rd (12.7%)(Table 33).

Table 33 : Reasons for preferring institutional sources

Reasons	Number	Percent
Fish of fishes is not influenced/exploited	86	28.7
Possibility of getting exemption	36	12.0
Low rate of interest	68	22.7
Others	9	3.0
Non response/do not prefer	194	64.7

N.B. Respondents mentioned more than one reason.

4.2 Utilization of Credit Money

Proper utilization of credit money is considered as one of the most important factors for making optimum use of credit. Optimum use of credit means the loanee members would use the loan money in the field of income generating activities. Credit money was utilized in broadly three purposes like fixed investment, operational expenses and social expenses. Fixed investment means amount spent for buying boat, net and engine. Operational expenses includes salaries of daily labour, purchase of food, medical facilities, transport cost, market fees, pay previous loan and other expenses Social expenses covers dowery, marriage and household expenditure. Some credit was utilized for maintenance of house. The house was damaged due to natural disasters. Majority of the respondents (43.2%) spend their loan money 'to meet operation expenditures', 43% 'invest in buying fishing equipments' and 31.7% on 'meeting social expenses'. As to quarry, the respondents mentioned various causes of views regarding of purchase of boat. The survey data show that majority of the respondents (14%) purchase new boat for efficiency in catching, 4.7% for replacing damaged boat, 3.7% for lost and 3.3.% for theft. In the case of net purchases, 8.7% mentioned theft and 7.7% pointed out damaged due to use of long period. In context of engine, 4% purchase for new model where as 2.7% pointed out theft as the cause of purchase.

Among the operational expenses, the survey result reveals that the average operational cost of sample respondent per trip ranges from 22% 'for meeting daily expenditure' at the highest to 1% 'for transport in the lowest'. It has been gathered that 8.3%, 5%, 4% and 2.7% of the respondents pointed out food, salaries, medicine and payment of previous loan installment respectively as their per trip expenditure. In this stage, we were interested to know from the respondents about their heads of social expenses. It depicts that 28.7%, 2.3% and 0.7% of the respondents pointed out 'household maintenance', 'marriage' and 'dowery' respectively as the heads of social expenditure.

Here an attempt was made to seek the views of the loanee members about major role played for utilization of loan. It appears that the male household head received the loan amount from the various sources i.e., institutional and non-institutional sources. Thus, female members of fisher folk community have no voice in the process of receiving credit services. Reportedly, development of family dependent on the joint collaboration of husband and wife. In study areas, the male household catches the fish in deep sea, thus, loan has been channelised to the owner of resources (fish). It seems that there is a linkage between ownership of resources and qualification of loan taking in study areas. Further, the male counterpart of household is the bread earner of the family and so loan will be taken by him. In such a case our effort is directed towards identifying problems encounter in the processes of getting credit.

4.3 Problems in Getting Credit

Credit which is of utmost necessity for economic activities can not go a long way to improve the conditions of coastal fishing communities and help development of coastal areas of Bangladesh. The survey data show that 84% of the respondent face problems in getting credit where as the rest 16% do not face any problem in the same (Table 35).

Table 35 : Problems in getting loan

Problems	Number	Percent
Faces problem	252	84.0
Not faces problem	48	16.0
Total	300	100%

At this stage, we were interested to know from the respondents about the nature of problems.

4.3.1 Nature of Problems

According to Muhammud Yunus of the Grameen Bank a virtuous circle can be established: low income, credit, investment, more in come, more credit, more investment, more income (Hulme and Mosley 1997). Coastal fishermen are poor people of rural Bangladesh. It has been reported that 57.7%, 48.3%, 43.3%, 27.3% and 14% of the sample respondents mentioned 'problem of collaterals', being followed by 'complex procedure', by 'high rate of interest', 'shortage of income' and 'others' respectively(Table 36). It seems that there is a linkage between more income and more credit.

Table 36: Nature of Problem

Nature of problems		
Problem of collaterals	173	57.7
High rate of interest	130	43.3
Complexity	145	48.3
Lack of income/unable to pay	82	27.3
Others	42	14.0
Not answered	37	12.3
	31	10.4

N. B. Some of the respondents mentioned more than one problem.

4.3.2 Suggestions to Overcome Problems in Getting Credit

The respondent expressed their views regarding their suggestions to overcome problems in getting credit which may be presented in descending order: (i) no collateral /commission (46.3%); (ii) low interest rate (35%); (iii) easy access/ formalities to sources to credit (20%); (iv) government co-operation (12.6%) and (v) others (5.3%). In study areas, during the survey period, it has been founded that the poor coastal fishermen are very interested for availing different types of credit services. They were found very interested and enthusiastic regarding credit services and their efficient management.

Table 37: Suggestions to overcome loan problems

Suggestions	Number(300)	Percent
Time relaxation/when p0ssible then repay	154	51.3
No collateral/commission	139	46.3
Easy access/formalities	60	20.0
Low interest/loan weave if fail	105	35.0
Government cooperation/help	38	12.6
Others	15	5.3
Not response	25	8.3

N. B. Some of the respondents mentioned more than one suggestion

4.3.3 Expectation about Credit Repayment

Repayment depends of the nature in the activities. Opinions about the expectation of credit repayment procedure were sought from the credit receiver fishermen. All respondents have five options which are : (i) when possible/income increase (77.7%); (ii) seasonal payment/installment (22%); (iii) small amount of installment (6%); (iv) no mental torture/punishment/case (5.3%); and (v) others 11.3%) (Table 38).

Table 38: Expectations about loan repayment

Expectations	Number(300)	Percent
When possible/income increase	233	77.7
Seasonal payment/installment	66	22.0
Low interest and big amount	18	6.0
No mental torture/punishment/case	16	5.3
Others	34	11.3
Not answer	22	7.4

N. B. Some of the respondents mentioned more than one expectation.

It has been reported that the majority of the sample respondents prefer to repay their loan when income is available. Some people want to repay their loan money at a time. But they need enough time for repayment. It appears that majority of the respondents expressed their views in favor of installment basis repayment.

4.3.4 Present Conditions of Credit Receivers

The sample coastal fishermen utilized their credit money in fish caching as well as maintaining their family and social lives. Opinion of the respondents in this context are: (i) improving trend of credit market (45.3%); (ii) no change in credit market (33.3%); (iii) deteriorate trend in credit market (5.6%)(Table 39).

Table 39 : Current position of loan services

Characteristics	Number	Percent
Improving	136	45.3
As per earlier	100	33.3
Deteriorate the situation	17	5.6
Non-response	47	15.7
Total	300	100%

Further, it has been observed that a number of NGOs are working in coastal villages for better livelihoods of poor fishermen. Among these, the important NGOs are : (i) Community Development Center (CODEC), (ii) Association for Zonal Approach Development (AZAD), (iii) Bandhujan Parised, (iv) Bangladesh Samaj Unnayan Samity (BSUS), (v) Deep Unnayan Sangstha, (vi) Uddipan, (vii) Gono Unnayan Prochesta, (GUP), (viii) Proshika Manabik Unnayan Kendra (Proshika-MUK).

4.3.5Expectation of Terms in Getting Credit

Rural people especially coastal fishermen are in a vicious circle. They do not have the capabilities to save and invest. Again, the nature of fishing is seasonal. So they are deprived of getting regular flow of income for maintaining their livelihoods from fishing. As a result, income generating activities are essential to create job opportunities in coastal villages in Bangladesh. It is rightly asserted that credit contributes positively in this direction. As to our query, the sample respondents give their opinions about the expectation of terms in getting credit. Opinions of the respondents in this regard are: (i) relaxed collateral conditions (83.3%); (ii) flexibility in credit repayment (41.7%); (iii) credit amount as required by fishermen (27.3%); (iv) market price of interest (29.3%); (v) free from any speed money (6%) and (vi) others (12%)(Table 40.

Table 40: Expectation of getting loan

Expectations	N	Percent
Collateral conditions relaxation	250	83.3
Loan in necessary time/rescheduling	125	41.7
Big amount as required	82	27.3
Low rate of interest/Govt. cooperation	88	29.3
No illegal money/power/commission	18	6.0
Others	36	12.0

N. B. Some of the respondents mentioned more than one expectation.

4.4 Demand for Other Financial Services

Bangladesh is, of course, a very poor country with no scheme of social security of any kind, not to speak of a system used in developed countries. It has been reported that after the death of a poor man or the only bread-winner of a family, it becomes difficult for his people to finance the burial of the deceased, not to speak of the food and shelter for his dependents (Ahmed 1987). This is more true in the case of coastal fishermen communities of Bangladesh. The coastal fishermen communities, in general, are very

poor. In most cases, more than 50% of the fishermen have no such valuable assets including land (Jeusen 1985). The fishermen communities in the coastal regions of Bangladesh provide the necessary fish and animal protein for the people of the country. They work in the Bay of Bengal day and night in rain, wind and cyclone. But, they are still poor. The social insurance is to provide protection to the weaker section of the society who are unable to pay the premium for adequate insurance (Mishra 2000). Social insurance includes unemployment benefits, sickness insurance, disability benefits, pension plans and the likes. It has been recognized not only as an important and valuable social security measure but also as an important instrument for mibilising domestic savings. It has proved to be an effective means of capital formation, essential for balance economic growth of a modern welfare state (Mandal 1998). Thus, it is rightly asserted that social insurance is an intelligent man's device of pooling the resources of many to help the unfortunate few. So long as the loss suffered by individuals is within the manageable limits of those who have been fortunate enough as not to have suffered, there is always a basis for insurance. Further, insurance serves national purpose by chanalizing the savings of common people and making them available for proper investment in national development activities. Moreover, insurance penetration (Profit volume in relation to GDP) and insurance density (premium per capita) reflects the significance of the insurance industry in relation to country's total economic activity and productivity which indicates how much the people of a country spends on average on insurance. It provides a good indication of the stage of development of insurance market and insurance purchase power of its population in country.

4.4.1 Knowledge of Social Insurance Scheme

Insurance is an important instrumental device through which protection is given to people against the consequences of loss of life and property (Ahmed 1987). In such a context, we were interested to know from the sample respondents whether they know about social insurance scheme. The results of the empirical survey portrays that 90% of the sample respondents have no knowledge about the social insurance scheme (Table 41.

Table 41: Knowledge of social insurance scheme

Response	Frequency	Percentage
Yes	30	10%
No	270	90%
Total	300	100%

It appears that they have no clear concept about the scheme as well as its benefits. Reportedly, the saving concept through insurance to have become unattractive to people in the study areas.

4.4.2 Latent Demand of Social Insurance Scheme

Many customers may share a strong need that can not be satisfied by any existing product. This is a strong latent demand for social measures like social insurance scheme. Data in this regard have been shown that 83.33% of the sample respondents are ready to

undertake SIS if they get any opportunity for such scheme and 16.67% of them responded negatively (Table 42.

Table 42 Latent demand of social insurance scheme

Response	Frequency	Percentage
Yes	250	83.33%
No	50	16.67%
Total	300	100%

The reasons behind negative responses are identified as low income, uncertainty of income, absence of fair idea about the scheme, high illiteracy rate, non-conversance with economic concept and the likes.

Chapter # 5 Savings Products

5.1 Types of Products

There are as many as six savings products in the country, but they exist just in name. Some NGOs have introduced diversified savings products like contractual savings deposits and fixed deposits but cannot comfortably operate now due to government restrictions (Rahman 2001). CODEC a non-government organization working only with fishing communities and it established a revolving loan fund termed as "CODEC Loan fund (CLF)" to support income generating activities of the male and female members of the village organizations (VOs) formed by CODEC. The credit program is similar to rural credit programs of other NGOs now popular in Bangladesh. It has two components: savings and credit. So the members of the VOs can avail the credit facilities of CODEC through mobilization of their weekly savings (Alamgir 1997). In such background we were interested to know the saving behaviors of sample respondents. The survey data reveal that 48.7% respondents opined positively in context of saving where as 51.3% respondents have no saving in study areas (Table 43).

Table 43 Savings behavior

Response	Number	Percent
Yes	146	48.7
No	154	51.3
Total	300	100%

Reportedly, low and seasonal income is the main causes of this situation. Further, social violence and natural disaster make the life of sample respondents more vulnerable.

5.2 Constraints to Savings

Subsidised credit funds or donated money seldom contributes to the limited mobilization of savings deposits because the NGOs do not feel any urge to collect savings from the people at relatively higher cost. NGOs receiving subsidized funding have little or no incentive to mobilize deposits, since they have funds available for on-lending from donors at zero cost (Rahman 2001). Further, as to query regarding reasons for not saving, they mentioned a number of reasons.

Table – 44 Reasons for not saving

Reasons for not saving	Number	Percent
Low income/high expanses	170	56.7
No other sources	51	17.0
Large family maintenance	10	3.3
Less catches or price	18	6.0
Excess loan/interest paid	41	13.7
Others	10	3.3
Total	300	100%

The survey data portray that the reasons for not savings are 'low income/high expense', 'no other sources of income', 'high interest rate or excess loan, 'less catches receiving lower price' 'large family maintenance' and 'other in terms of percentages are 56.7%, 17.0%, 13.7%, 6%, 3.3% and 3.3% respectively (Table 44).

5.2.1 Cost of Savings

The NGOs usually do not launch any effective drive for savings mobilization compared to the efforts they devote to loan installment collection. They rarely adopt any promotional measures to increase savings and remain complacent by achieving just the target savings. The NGOs do not employ any separate deposit collectors to augment savings. Small savings collection is inherently costly (Rahman 2001). The success of financial service marketing depends upon a number of factors such as achievement motivation, lucrative pricing, competitive benefits, door-to-door service and the likes. Reportedly, the sample respondents are not aware of these services, thus saving mobilization program are far away to reach the target market segments. In this context, the respondents mentioned a number constraints of savings are 'low income/ low catches', 'robbery/loot/extortion', 'natural disasters', 'social expenses for marriage/ education/funeral function', 'excess loon/interest' and 'other' in terms of percentages are 67%, 42%, 22.3%, 10.3%, 7.7% and 2.7% respectively (Table 45).

Table 45 : Cost of saving

Constraints	Number	Percent
Low income/fish decreasing	201	67.0
Robbery/loot/Extortionism	126	42.0
Marriage/Education/funeral function	31	10.3
Natural disasters	67	22.3
Excess loan	23	7.7
Others	8	2.7

N. B. Some of the respondents mentioned more than one constraint.

5.3 Assistance Expected From NGOs

NGO can help in various ways for the better livelihoods of the fishing communities. As per query, the sample respondents mentioned that they expect a number of assistances from the NGOs.

Table 46: Assistance expect from NGO

Assistance	Number	Percent
Supervision and training with fund	157	52.3
Create income generating source	192	64.0
Supply fishing equipment/ensure good pricing	104	34.7
Dislike NGOs and their activities	29	9.7
Other	15	5.0

N. B. Some of the respondents mentioned more than one assistance.

Table 46 portrays that among the various types of assistances expected from NGOs the important ones are 'creation of income generating source' 'supervision and training with

fund', 'supply of fishing equipment/ ensuring good pricing', technical assistance from NGO' and 'others' They are in terms of percentages 64%, 52.3%, 34.7%, 9.7% and 5% respectively.

5.4 Assistance Expected from Banks

Bank, as an institution of formal financial market offers different types of assistances in the socio-economic development of the country.

Table 47 : Kinds of bank assistance regarding income increase and savings

Kinds of assistance	Number	Percent
Advancing loan through easier procedures	172	57.3
Offering collateral free loan	145	48.3
Providing information about loan scheme	158	52.7
Training for saving orientation	69	23.0
Others	27	9.0

N. B. Some of the respondents mentioned more than one assistance.

Table depicts that sample respondents expect package of assistances from bank. Reportedly, 'advancing loan through easier procedures' (57.3%), 'offering collateral-free loan' (48.3%), 'providing timely information about different loan schemes' (52.7%), 'training for orientation to savings' (23%) and 'others' (9%) are the various kinds of assistances that are expected from the banks by the respondents of the study areas.

Chapter # 6 Credits services and Women Involvement

6.1 Personal Characteristics of the Women Headed Fishers

According to the norm of a particular culture, the roles of men and women in the society have tended to be quite different. But at present, the nature of this role is gradually changing (Saleh, 1995). Again the 'Nairobi Forward Looking Strategies' for the advancement of women is a culmination of general realization by the world community that attainment of any sustainable development activities can not be achieved without the full participation and integration of women in all spheres of life and development of an action plan to uplift the socio-economic position of women (Government of Bangladesh 1994). Thus, an attempt has been made to get an idea about the personal characteristics of selected women fisher folk. Data in this regard have been shown in Table – 48.

Table 48: Characteristics of Women Headed Fisher Household

Characteristics	Number of Respondents	Frequency of Percentage
Single	42	14
Married	70	23.33
Divorced	80	26.67
Widow	108	36
Total	300	100

Table –48 shows that 36%, 26.67%, 23.33% and 14% of the sample women fisher folk respondents are in the categories of widow, divorced, married and single respectively. It has been reported that these women fisher folk are involved in various types of income generating activities (IGAs). It seems that IGAs will open-up new opportunities for sample respondents towards socio-economic empowerment. In this stage, we were interested to know from the sample respondents about the sources of income of the women headed fishers household in the study areas.

6. 2 Sources of Income : Women Headed Fishers Household

Though the family of the sample respondents earn from various sources, all sources are directly or indirectly related to fishing and other related activities. An attempt is made to find out the relative share of different sources of income. The survey result portrays that among the sample respondents 30%, 20%,16.67%, 13.3%, 12% and 8% earn from fish vending, net making and repairing, fish drying, bamboo based fish packers, fish processing and others respectively (Table –49).

Table 49: Sources of Income of Women Headed Fishers Household

Main Sources	Number of Respondents	Frequency of Percentage
Fish Trading	90	30
Net Making and Repairing	60	20
Fish Drying	50	16.67
Making Bamboo Fish Packer	40	13.33
Fish Processing	36	12
Others	24	8
Total	300	100

Admittedly, these activities will create new income generating activities for poor coastal women fisher folk of study areas. The process will motivate the target groups for taking new ventures based on their indigenous skills that, in turn, create favorable environment for empowerment of sample women.

6.3 Monthly Family Income: Women Headed Fisher Household

Income may be treated as a motivating factor, which induces an individual to perform (Koontz et al 1980). Further the level of income is one of the important ingredients of financial incentives, and thereby, ultimately affect natural resource based business development processes. Against this background, data related average monthly income of sample respondents have been collected. The survey results reveal that the range of income earned per month by the respondents ranged from Tk. 8000 and above' at the highest to 'less than Tk. 2000' at the lowest. Again among the respondents the highest percentage of the family of the women fisher folk earned three to four thousand (28%) whereas the lowest percentage earned eight thousand and above (10.67%) (Table –50).

Table 50: Monthly Family Income of the Women Headed Fisher folk Family

Income ('000Tk.)	Number of Respondents	Frequency of Percentage
Less than 2	40	13.33
2 – 3	52	17.33
3 – 4	84	28
4 – 5	38	12.67
5 - 8	54	18
8 and above	32	10.67
Total	300	100

It is also true that financial incomes always conceived as a means to or as an indicator of social status. This observation elucidates the faith on money power to get status in the society (Deshpande 1984).

6. 4 Reasons for taking loan

Women fisher folk demand basic needs i.e., food, housing, health care, sanitation, and education for maintaining their livelihood. The coastal fisher folk communities depend on only fish related works. It is their only sources of income. Again, the quantity of fish catching is declining day by day and women have limited trading opportunities. So they need credit for meeting their different types of requirements. In such context, we were interested to know from the sample respondents about the reasons for taking credit. The survey data evidence that majority of the respondents (18%) took loan to meet the losses caused by natural disaster, 17.33% for repayment of previous loan, 16% for daily recurring expenses (for food, medicine, education etc.) 14.66% for purchasing of bamboo in order to make bamboo-made fish packers, 12.66% for purchasing yarn, 7.3% for marriage and dowry of their children. Among the respondents (14%) opined that they did not take any loan from any sources (Table-51)

Table 51: Reasons for Taking Loan

Reasons for taking loan	Number	Frequency of Percentage
Purchase of yarn for net making	38	12.66
Purchase of procurement of bamboo	44	14.66
Expenses for food, medicine, education	48	16
Marriage & dowry	22	7.3
Natural disaster	54	18
Pay previous loan	52	17.33
Not enjoyed any loan	42	14
Total	300	100

6.5 Sources of Credit : Women Headed Fishers Household

The sample respondents take loan from two sources viz. institutional sources and non-institutional sources. An attempt is made to find out the relative share and magnitude of institutional and non-institutional credits from the sample respondents in the study areas. The collected data in this regard shows that the sample respondents take lion share of their loans from non-institutional sources. The percentages of non-institutional sources are 56% where the contribution of institutional sources are only 30%. A further query as to the sources of non-institutional loan, it was found that 'relatives' ranked the highest (21.33%), followed by 'mahajan' (16%), 'old dadandar' (6.6%), paiker' (4%), 'friends', new dadandar' and 'goldsmith' (2.7%) respectively (Table-5). Among the institutional sources, the survey data show that 'NGO' ranked the highest (17.33%), followed by 'Samity' (7.3%) and 'Bank' (5.33%) Table –52).

Table 52: Sources of Loan

Sources	Number of Respondents	Frequency of Percentage
Non – institutional Sources: Relatives	64	21.3
Friends	8	2.7
Mahazan	48	16
New damandar	8	2.7
Old Dadander	20	6.67
Paikar	12	4
Gold smith	8	2.7
Institutional Sources: Bank	16	5.33
NGO	52	17.33
Samity/others	22	7.3
Not enjoyed any loan	42	14
Total	300	100

In such context we were interested to know from the sample respondents whether there is any relationship between the personal characteristics and sources of loan taken by the sample women fisher folk. The survey reveals that there is a positive correlation between the personal characteristics of loanee and the sources of loan and the value of 'r' is +0.98. It is evident from the research findings that the widow, divorced, married and poor single women take loan from informal sources.

6.5.1 Preferences of Sources of Loan

The components of non-institutional financial market have dominated rural financial market. Among the non-institutional components, 'relatives' play a significant role in providing financial services to the women headed fisher folk household. Further, we were interested to know about the attitude of sample respondents towards the different sources of loan. A further query as to the preference among the sources, it was found that 'relatives' (5%), 'Bank' (5%), (table –53).

Table 53: Preference of Sources of Loan

Sources	Number of Respondents	Frequency of Percentage
Non – institutional Sources Relatives	136	45.7
Friends	10	3
Mahazan	16	5
New damandar	6	2
Old Dadander	10	3
Paikar	6	2
Institutional Sources Bank	16	5
NGO	30	10
Samity/others	28	9.33
Don't prefer/Non-response	42	14
Total	300	100

It appears that though they prefer relatives as their sources of loan, the relatives position do not support to give the loan to their loanee relatives. Again, among the institutional sources they prefer bank as a source of loan instead of NGO and other sources. In such context we were interested to know the amount of loan taken by sample respondents from various sources.

6.5.2 Amount of Loan Taken From Various Sources

There is a large gap between demand and supply of credit, more funds needs to be channelised through various sources to study areas. Again, loan is taken for meeting the various purposes of sample respondents. The survey result portrays that among the sample respondents 24%, 18%, 17.33%, 16%, 14%, 6% and 4.67% have taken loan amount in thousand taka viz. '<2', 10.1-12', '4.1-6', '8.1-10', 2.1-4', 6-8' and '12.1 and above' respectively (Table –54).

Table 54: Amount of Loan Taken from Various Sources

Loan amount (thousand)	Number of Respondents	Frequency of Percentage
<2	52	24
2.1 – 4	42	14
4.1 – 6	52	17.33
6 – 8	18	6
8.1 - 10	48	16
10.1 – 12	54	18
12.1 and above	14	4.67
Total	300	100

6.5.3 Reasons for Preferring Non-institutional Loans

We asked our samples to give their opinion as reasons for preferring non-institutional sources. Their responses have corroborated that 'easy to access' ranked the highest (71.71), 'no collateral' ranked the 2nd (60%), 'no formalities are required' ranked the 3rd (39%), 'no stipulated repayment date' ranked the 4th (27%) and others ranked the 5th (10%) in order of magnitude (Table 55).

Table 55: Reasons for preferring Non-institutional Loan

Reasons	Number of Respondents	Frequency of Percentage
Easy to access	107	71.7
No formalities are required	54	39
No collaterals	90	60.6
No stipulated repayment	40	27
Others	15	10

N.B. Some of the respondents mentioned more than one reasons.

It has been observed that preference of market segment based on mainly two factors viz., easy access as well as no requirement of collateral. In this situation, our query was also to identify the reason for preferring institutional sources.

6.5.4 Reasons for Disliking of the Institutional Sources of Loan

The institutional sources, mainly banks supply credit under the bindings of collateral security. But as majority of the coastal woman fisher folk are poor, they do not have adequate securities to offer which restraint institutional credit as a source of loan to the coastal weaker section of people. Further, the sample respondents mentioned a number of reasons for disliking the sources of institutional loan. The finding in this regard reveal that among the respondents 56.67% opined the most important reason is difficult and lengthy loan sanctioning procedure of institutional sources of loan. The other reasons are 'creation of pressure' ranked the 2nd (35.34%), 'demands illegal money' ranked the 3rd (28.67%) and needs collateral ranked the 4th (23%) Table 56).

Table 56: Reasons for Disliking the Institutional Sources by the Respondents

Reasons	Number of Respondents	Frequency of Percentage
-Difficult/ complicated/ unable to enjoy	150	50.0
-Created pressure/ tortured/ don't understand season	53	35.34
- Needs commission/ high interest/ want illegal money	43	28.67
- Needs collateral	35	23
- Others	54	36

N.B. Some of the respondents mentioned more than one reasons

It seems that due to illiteracy, non socialization, lack of linkage with social elites are the other important reasons in disliking the institutional sources of loan.

Chapter # 7 Policy Implications

7.1 Major Problems of Fishermen Community

The lives of fishermen community are plagued with a number of formidable problems in managing their livelihoods. The sample respondents mentioned a number of problems which have been summarized in Table 57.

Table 57: Major problems in fishermen community

Problems	Number (300)	Percent
Absence of credit facilities	123	40
Lack of sea security	62	21.1
Piracy/Hijacker/robbery	116	38.7
Lack of education/wealth/transport/facility	100	33.3
Poverty/low fish catching/pricing	47	15.7
Risky/laborious job	25	8.3
Virus in fish/salty water/natural disaster	29	9.6
Others including polluted sea water	65	21.7

N.B. Some of the respondents mentioned more than one problem.

It reveal that the problems are 'absence of credit facilities' (40%) 'lack of sea security'(21.1%), 'piracy/ hijacking/robbery' (38.7%), 'lack of education/wealth/transport facility'(33.3%), 'poverty/low fish catching / exploitative pricing' (15.7%), 'risky job/ laborious work' (8.3%), 'virus in fish/natural disaster/salty water' (9.6%) and 'others including polluted sea water' (21.7%) respectively.

7.2 Recommendations for Solving the Problems of Fishing Communities

Bangladesh has enormous potentialities in terms of natural resources endowment like fisheries for the development of fishing communities. While potentialities are great, an appropriate and supportive environment becomes necessary for such potentialities to be fruitful. In this regard, data have been collected and presented in Table 58.

Table 58 : Suggestions for solving the problems

Suggestions	Frequency in Percentage
Entrepreneurial training	30
Providing social security	41
Easy access to credit	40.3
Proving assistance to secondary occupation	37.3
Policy for environment pollution control	30.3
Establishing new bank for fishermen	12
Effective motivational training	30
Development of infra-structural facilities and credit services by NGO	50
Training/ consultancy in credit management	45
Ensuring social security by government authority	20

N.B. Some of the respondents mentioned more than one suggestion.

Opinions regarding solution of multifarious problems of the fishing communities in Bangladesh is confronted with are (i) development of infra-structural facilities & credit services by NGO (50%), (ii) training /consultancy in credit management (45%), (iii) providing social security by local government authority (41%), (iv) easy access to institutional credit (40.3%), (v) providing assistance to secondary occupation (37.3%), (vi) policy measure for pollution control (33.3%), (vii) establishing new bank for fishermen (12%), (viii) effective motivational training (11%).

Further, coastal fishermen may be brought into a network by some agencies like 'Centre for Fishermen Development' to suggest and advice them to solve multi-dimensional professional and occupational problems. The establishment of such institution to reduce the possibility of exploitation of moneylenders and market intermediaries. Again regulated market may help a positive role in this direction. Moreover, arrangement of adequate finance at market rate may contribute significant role in the coastal fishermen socio-economic development in study areas. Again financial support system needs to be dynamic so that concerned fishermen can get the benefits of NGO's credit facilities. Further, institutions involved in income generating activities and other support services should in close cooperation among themselves for development of coastal fishing communities of Bangladesh.

7.3 Direction for Further Research

It is hoped that the livelihoods of poor costal fisherfolk will be improved if necessary actions are taken by the concerned groups according to the recommendations of the present research. But, credit and gender issues are vast subject and it is difficult for a researcher to cover all the aspects in detail of it. Therefore the field remain sufficiently potential for further research. Following are some of the directions in this regard

(i) The study was conducted over six coastal villages of Bangladesh. Such a study over other villages of Bangladesh may be worth mentioning

(ii) The study did not covered women empowerment through credit services of the sample villages. Thus, a study over the women empowerment through credit services may be conducted.

(iii) A study on the 'credit services, women empowerment through small entrepreneurship development based fishery resources may be conducted which was not examined in this research to detail.

A few suggestions for further research in the area of credit services, women empowerment, small entrepreneurship development based on fishery resources have been put forward above. This is not exhaustive one. However, this may stimulate interest of the researchers and provide guidelines for the further research in this field.

Bibliography

Ali, M. L., Matshyasampad Unnayon O Babosthapona Koushal (Fisheries Development and Management Strategy). Sankalan: Matsya Sampad Unnayan, Fish Week 98. Directorate of Fisheries and Ministry of Fisheries and Livestock, 'Government of the People's Republic of Bangladesh, Dhaka (in Bengali), 1998.

Amin, N. M. Matshyasampad Babosthaponai Prathisthanik Samonnoyer Guruttya (Importance of Institutional Co-ordination in Managing Fisheries Resources, Sankalan: Matsys Sampad Unnayan, Fish Week 98. Directorate of Fisheries and Ministry of Fisheries and Livestock, Government of the people's Republic of Bangladesh, Dhaka (in Bengali) 1998.

Aaker, David A. and Day, Jeorge S. Research Private and Public Sector Decision, N. Y. : John Wiley and Sons, 1980.

Ahmad, Shaihduddin, "Entrepreneurship and Management in Bangladesh", Op.cit.,
Alamgir, Dewan, A. H. (1997), Savings: A Pragmatic Way to Defeat Poverty, Holiday, 1985.

Alam, K, Two Fishing Villages of Bangladesh: A Community Study,1996.

Ahmed, S. U., Attitude in Rural Areas Towards a Particular Insurance Scheme: An Empirical Study, Dhaka University Studies (Part –c), p. 177, 1987.

Ahmed, Razia. S. Financing the Rural Poor: Obstacles and Realities, Dhaka University Press Ltd. P. 7. 1983.

Blowfield, M. E. and Haque N. Ties Between Marketing and Credit in Coastal Bangladesh – Safety Net or Debt Trap, PHF News, Issue No. 6, Chennai, India, 1996.

Banik, R. C. K., Humayun, N. M., Matsya Sakranto Parishankhan (Fish Related Statistics). Sankalan: Matsya Sampad Unnayan, Fish Week 98. Directorate of Fisheries and Ministry of Fisheries and Livestock, Government of the People's Republic of Bangladesh, Dhaka (in Bengali), 1998.

Blowfield, M. E. & Kamila, A/. (n.d.) Credit Services Women and Empowerment in Coastal Fishing Communities : Case Studies from Tamil Nadu and Bangladesh, Post Harvest Fisheries Project, DFID.

Bennet, C. J., Socio-Economic Aspects of Estuarine Set Bag Net Fisheries, NRI, Chatham, Kent, U.K., 1991.

Bertocci, P. J. Elusive Village: Social Structure Community Organization in Rural East Pakistan (Ph.D. Thesis, Michigan State University), 1970.

Chowdhury, Ahmed Rafi "Women in Social Development in Bangladesh", Paper presented in a Conference on Implementation Status of Nairobi Forward Looking Strategies, Dhaka, .1994.

Ct. Lipset, S. M. and R. Bendix, Social Mobility in Industrial Society, London: Heinemann, 1959.

Chowdhury, A. Rouf., Government Fillip Needed to Save Marine fisheries Export, The Bangladesh observer, 2002.

Carney, Diana et.al. Livelihoods Approaches Compared DFID, CARE, Oxfam and UNDP, 1999.

Chowdhury, Abdul Mannan, The Emergence of Growth of Entrepreneur in some Developing Countries; The D.U. Studies Part C Vol- IX No. 1 p. 6., 1988.

Deshpande, Manohar U. Entrepreneurship of Small Scale Industries, New Delhi: Deep & Deep Publication, 1984.

Dastidar, Ranajit, Literature Reviwe on Fish Distribution from Coastal Communities Market and Credit Access Issues, Paper Presented at a Workshop held at Chittagong, March 27-28, P. 53. 2001.

Government of Bangladesh, Ministry of Planning, Statistical Year Book, 1999.

Government of Bangladesh, Ministry of Fishery and Livestock 1997.

Government of Bangladesh Executive summary of a seminar proceeding organized by, 'Ministry of Women Affairs Women and Empowerment', Dhaka-1. .1994.

Eigen, Johanna, "Assistance to Woman's Business: Evaluating the Options", Small Enterprise development, 1992.

Hulme, David and Mosley, Paul Finance for the Poor or Poorest? Financial Innovation, Poverty and Vulnerability, in Geoffrey D Wood and Iffath Sharif (ed.), Who Needs Credit? Proverty and Finance in Bangladesh, Dhaka: The University Press Limited, 1997.

Hasan, Mahmudul, Coastal Fishermen Communities of Bangladesh: Some Facts and Observations, Observer Magazine, March 2, 2001.

Haque, M. Shamsul, Rationale for Increasing Academic Support for Entrepreneurship and Small Business Development in Bangladesh, Journal of Business Administration, Vol. 18, 1992.

Haque, M. Shamsul, Rationale for Increasing Academic Support for Entrepreneurship and Small Business Development in Bangladesh, Journal Business Administration, Vol. 18, 1992.

Huq, Mahfuzul and Huq Ataul, "Fishermen in Natural Depression of Bangladesh: Socio-Economic Conditions and Standards of Living, in Panayoton, (ed.) Small –Scale Fisheries in Asia, Srilanka, Pp. 84-93., 1998.

Jeusen (1985), quoted in Hasan, M., Coastal Fishermen Communities of Bangladesh: Same Facts and observation, The Bangladesh Observer Magazine, March2, p. 19, 2001.

Kleih, Ulrich "Fish Distribution from Coastal Communities: Market and Credit Access Issues" Paper presented in workshop at CARITUS auditorium Chittagong, 27-28 March 2001.

Koontz, Harold et al Management, London McGraw –Hill International Book Company, 1980.

Kotler, Philip and Armstrong, Gary, Principles of Marketing, New Delhi: Prentice Hall of India PVT Ltd. 1995.

Kinnear, Thomas & Bernhardt, L. Kerreth, , Principles of Marketing, N. J. Scott, Foreman Co., Pp- 120 1983.

Mian, Ali Mohammad and Myan, Alimullah M., An Introduction to Statistics, Dhaka: Ideal Library, 1994.

Mannan, M. A., "Small- Scale Industrialization in a Labor Abundant Low Growth Economy: The Bangladesh Experience", Dhaka University Journal of Business Studies, Vol. 14(2), 1993.

Mishra, M. N., Insurance: Principles and Practice, New Delhi: S. Chand & Company Ltd. P. 14. 2000.

Mandal, M. G., Insurance Industry in Bangladesh: An Overview, Insurance Journal, Vol. 49, p. 22. 1998.

Maloney. Clarence and Ahmed, A. B. Sharfuddin, Rural Saving and Credit in Bangladesh, Dhaka University Press Ltd. P. 42.

Oudwater, Nicoliene, The Sustainable Livelihoods Approach and its Relevance for Fish Marketing, Paper presented in the Inception Workshop on 'Poverty Alleviation and Livelihood Security among the Coastal Fishing Communities', CARITAS Auditorium, Chittagong, Bangladesh, 27-28 March, 2001.

Rahman, AHM Habibur et. al., Entrepreneurship and Small Enterprise Development in Bangladesh (Mimeo), Dhaka University: Bureau of Business Research, 1978.

Rahman, A. H. M. Habibur, "Entrepreneurship and Small Enterprise development in Bangladesh", in Abdul Mannan (ed.) Entrepreneurship and Management in Bangladesh, Chittagong University: Business Research Bureau, 1985.

Rahman Moshahidur, "Problems of Entrepreneurship and Business Management in Bangladesh: Some Issues and Challenges", in Entrepreneurship and Management in Bangladesh, op.cit., 1985.

Rahman, S. M.), Savings: A Pragmatic Way to Defeat Poverty, Holiday, 2001.

Rahman , Md. Masudur & Chowdhury, Wahidur Nabi, "Fisheries Management in the Context of the National Fisheries Policy in Bangladesh", Paper Presented in a Workshop on 'Fisheries socio –economies and Management Policy Planning' Held on November 24-December 1, in Sanghai, Thailand, 1998.

Saleh, Abu A Profile of the Women Entrepreneurship in Bangladesh, Dhaka University Journal of Business Studies, Vol. 16(1). 1995.

Sharma S.V.S., Small Entrepreneurial Development in some Asian Countries: A Comparative Study, New Delhi: Light & Life Publications, 1979.

Solaiman, Mohammed, "Marketing Constraints and Potentialities in Promotion of small-scale fishiness. A study of two fishermen villages in Bangladesh (Research Mimeograph) Sponsored and Financed by Chittagong University Research cell, 1999.

..... "Women Fish Farmers of Greater Chittagong District: A Study on Small Entrepreneurship Development" Chittagong University Studies (Commerce, Vol. XII (Accepted for Publication), 1999.

....., "Role of NGOs in Management of Development: Focus on Women Entrepreneurship in Rural Bangladesh" in Abdur Rob (ed) Management of Development: Growth with Equity, New Delhi: Excel Books, Pp 556-566, 1998.

Task Force, Managing the Development Process: Bangladesh Development Strategies, Vol. 2 University Press Limited, Dhaka, 1991.

Ulrick Kleih, "Fish Distribution from Coastal Communities: Market and Credit Access Issues" paper presented in workshop at CARITUS auditorium Chittagong, 27-28, March, 2001.

Wayre, Nafziger, E. The Relationship Between Education and Entrepreneurship in Nigeria, The Journal of developing areas, Vol. 4, 1979.
World Bank, Bangladesh Action Plan for Flood Control. 11 December, 1989.

Yater, F. and Esporals, A.E., "Economic Aspects of Processing and Marketing" in I. R. Smith & A. N. Mines (ed.) Small- Scale Fisheries of San Miguel Bay, Philippine, Institute of Fisheries development & Research, University of the Philippines, Pp. 104-124., 1982.

Consultation Workshops on "Fish Distribution from Coastal Communities – Market and Credit Access Issues", Chittagong, 22- 23 July 2002, and Dhaka, 25 July 2002.

FISH MARKETING SYSTEM FROM COASTAL AREAS OF BANGLADESH

A. N. M. Nurul Kareem, Professor & Chairman, Department of Marketing, University of Chittagong

A preliminary version of this paper was presented at the workshop. The following paper represents the final document which was subsequently submitted by the author.

Fish Marketing System From Coastal Areas of Bangladesh

A. N. M. Nurul Kareem
Professor & Chairman
Department of Marketing
University of Chittagong
Chittagong, Bangladesh
Email: rabbanee@ctgu.edu

Sponsored and Financed by 'Support of University Fisheries Education and Research' DFID-UK, SUFER Project, 4th Floor, University Grants Commission of Bangladesh, Agargaon, Dhaka- 1207.

October, 2002

CONTENTS

Fish Marketing System from Coastal Fishing Communities of Bangladesh

Acknowledgement

The researcher would like to extend sincere thanks to Mr. C. P. Morrice and Dr. Zaman of SUFFER project Dhaka for their cooperation in the various stages of this research work . Thanks are also due to Dr. Kleih and Dr. Anson of NRI, UK for their academic advice and research guidance in different phases of conducting this project. The researcher is also grateful to the Managing Director and other officials of CODEC as well as relevant research associates whose contribution make the present venture a success.

Glossary

Aratdar :Trader/ Wholesaler/ Fish Assembler

Mahajan :Money Lender

BFDC : Bangladesh Fisheries Development Corporation

DOF : Department of Fisheries

Dalal :Commission Agent

Nickaries : Local Retailer

Paiker : Local Wholesaler

Chalani :Distributer

CODEC : Community Development Centre

Dadandar : Fish trader as well as money lender

Executive Summary

Mainly due to population growth, there is a growing gap between supply and demand for fish and fish products in Bangladesh. Narrowing the gap not only requires increasing production but also improvements to the post-harvest activities including all aspects of the marketing and distribution chain. The study covered six coastal villages and three large fish markets of Bangladesh. The total sample respondents are 600. Among them, 300 fishermen were selected from the six study villages, taking fifty from each village. Again, 300 traders were selected from 3 landing centers as well as from the most dominant fish distribution centers of Bangladesh. Maine fishery offers three hundred species of fish and 25 species of prawn in Bangladesh. The research portrays that the purpose of fish catching in deep sea are to sell directly to the 'arathdars', to the floating paiker and to the local landing place in terms of percentages 51.98%, 31.70% and 16.32% respectively. The survey data reveal that 77.56%, 17.33% and 5.11% of the respondents mentioned time passes, between catching, and landing from '7 to 10 days', '1 day' and '2 to 4 days' respectively. It has been identified that tiers of market structure are four viz. primary, secondary, higher secondary and consumer market, dadandar and market intermediaries play an important role in buying and selling process of fish in study areas. Reportedly, the of fish catching is decreasing day by day in sea. For the better livelihood of coasted fishermen, it seems that alternative income generating activities are required for their survival. The survey data reveal that in the peak season the highest catch is 800 kg. in the month of September in terms of percentages 19.45% and 9.24% respectively. The research point out 55% opined that price varies due to procurement from fishermen/ moneylender where as 45% replied negatively in the same. It reveals that the percentages of variations are '1-5', '5-10' '10-15', 15-20', '20 and above' in terms of percentages 33-67%, 10-67%, 6.33%, 1.6% and 0.67% respectively. The research reveals that a long chain of intermediaries is involved in passing the fishes from fishermen to consumers through different channels members like money lender, local paiker, arathdar, mahajan, faia, dalal, wholesaler, distributes and the liker. An analysis of the findings and our observation reveals that about 10.68% of the fishermens reach the consumers through direct channel and the rest through indirect channel. The survey reveals that among the respondents, 94.67% preserve their fishes through traditional system by using ice, 2.67% preserve their catches through cold storage and private preservation system; 1.33% opined cold storage and private preservation store with ice as their modes of storage system. Among the respondents, 72.7%, 15%, 8.7% and 3.6% use the packaging system of 'bamboo made basket', 'wood made box' 'plastic tray' and others respectively. It appears that the fishes may be packed in layers and an inch or more by bulge may be used for the purpose. Further, extra, extra cleats on the covers may be used to serve to protect the upper layer fishes from quality deterioration. The sample respondents opined in favor of comfortable and scientific packaging system. Thus, it protects the quality of fishes from deterioration, and freshness of fishes may be ensured to be intact. It positively affects the efficiency of marketing of fish in the study areas. Main problems in fish marketing system have been identified to be the Lack of easy access to credit, absence of adequate marketing information, lack of security at sea for fishermen, lack of modern communication facilities, lack of adequate fishing equipment, absence of adequate transportation system, exploitation through dadandari system, absence of logistic support

for efficient distribution & lack of adequate storage facilities, pollution of seawater hindering sea fish breeding, lack of standard weighing system, absence of well constructed landing site, absence of government help and guidance, quickly perishable nature of fishes, presence of limited number of NGOs in study areas, manipulation of the middlemen at the different stages of the distribution chain in study areas. The research makes some recommendations to make fish marketing system efficient and effective such as easy access to market, security at deep sea for fishermen, easy access to loan, development of communication and transport facilities, availability of logistic support, improvement of law and order situation in the coastal areas, adopting legal measures & creating social awareness to control sea water pollution, ensuring regular flow of marketing information, co-ordination among the program of the government bodies for ecological balance, constriction of good landing site and offering opportunities for development of backward as well as forward linkage industries.

Chapter # 1 : Introduction

1.1 Background

In the fish marketing of Bangladesh, fish traders are also moneylenders. These fish traders are known as dadandars. A dadandar as a fish trader as well as money lender, lends money to a fishermen. Usually, the dadandar lends money to a fisherman with no collateral, no explicit interest rate and no repayment schedule, except for a commitment by the fisherman-debtor to deliver him all catches to the dadandar – creditor as long as the debt is outstanding. There is a general allegation that by combining the dual function of money lending and fish marketing, the dadandar exploits the fishermen in the sense of paying a price substantially lower than the prevailing market price. Thus, fishermen are deprived of fair price of their fishes. This is perhaps, due to a large price spread between the price paid by the ultimate consumers/ users and the price received by the fishermen. The large price spread enables the dadandar to reap the maximum benefit from the marketing operations and thereby the fishermen are to suffer. An efficient marketing system is an important requisite for enhancing the productivity of renewable natural resources like fisheries. The increase in catches enable the fishermen to get higher return from the investment of their capital assets. It appears that proper and effective utilization of capital assets of poor coastal fishermen may play a significant role in the process of better livelihoods in their lives. It is admitted that marketing efficiency is to be evaluated with reference to movement of produces from the producers to consumers at the lowest cost consistent with the provision of services as desired by the consumers. Mainly due to population growth, there is a growing gap between supply and demand for fish and fish products in Bangladesh. Narrowing the gap not only requires increasing production but also improvements to the post-harvest activities including all aspects of the marketing and distribution chain.

Coastal communities, in particular, are considered to lose out in the marketing chain and to suffer from lack of access to credit sources. In addition, fishing is highly seasonal activity (mainly from June till September), leaving the fishing community with little income for the remaining of the years, thereby increasing the populations economic vulnerability. An article in the observer (March 9, 2001) on the problems and prospects of coastal communities highlights the declining living standards of fisher-folk which is linked to low prices for marine fish production.

But it appears that coastal fish farmers are not motivated to increase their producing, processing, drying and other related activities due to the uncertainty of demand and wastage of fishes in the absence of cheap and efficient marketing system. One of the major problems of marine fish marketing is that fish farmers are often deprived of fair price for their produces. This is perhaps due to a large price spread between the price paid by the ultimate consumers/ users and price received by the coastal fish farmers. Thus combining the dual functions of money lending and fish marketing, the middlemen exploit the fish farmers in the sense of paying a price substantially lower then the prevailing market price. The socially, politically and financially weakened coastal fish farmers can not play any role virtually in the marketing of their produces due to exploitation of middlemen. Therefore, an alternative and efficient marketing system is an

important requisite for enhancing the productivity of this renewable natural resource sector

Against this background, the study examine the marketing system of marine fish in relation to its market structure, distribution chain, price determination, logistic supports and their ultimate impact on the fishermen, dadandar, other interest groups and the national economy as a whole.

1.2 Purpose

The purpose of the research is to analyze the functioning of the fish marketing system which originates in coastal communities and to develop recommendations to improve the livelihoods of poor participants in the fish commodity chain.
Specifically, the project:

- Provides information on marine fish distribution systems;
- Examines fish market structure;
- Distribution of total harvesting through money lenders, auctioneers, negotiators and direct marketing;
- Provides analyses of cost-benefit and profit margin of the key actors at different market stages;
- Price determination in different markets
- Identify marketing related problems of fishers;
- Develop recommendations to be implemented by Government, NGOs, the private sector and donor organizations.

1.3 Research Methodology

1.3.1 Backdrop

On January 30, 2001 a meeting was held at the CODEC head office, Nasirabad, Chittagong, for launching the present research project titled **"Fish Distribution from Coastal Communities in Bangladesh- Market and Credit Access Issues."** Mr. Ulrich Kleih of NRI, Mr John Sanchez of NRIL Ltd, Mr Alan Marriott, Independent Consultant, and Dr. Khurshid Alam of CODEC, participated in the discussion of the proposed research project about its rationality and importance in the context of socio-economic development of coastal fishermen of Bangladesh. Among the participants, Prof. M. Sekander Khan of Economics Deptt. and Dr. Mohammed Solaiman of Marketing Department. of Chittagong University shared their views on the agenda of the meeting. From March 27 through 28, 2001, at Caritas Auditorium, Hill View Housing Society, Chittagong, a workshop was held in order to decide and determine the priority research areas, design research methodology and mode of dissemination of research findings. In the meantime Department for International Development (DFID) approved the project for funding and NRI, CODEC and University of Chittagong were identified as collaborators to the project. It was decided that Dr. Iftekhar will do research on sociological aspect, Dr. Solaiman on credit issues and Professor Kareem on the fish distribution system from the coastal areas to the consumer markets in Bangladesh.

1.3.2 Theoretical Framework

For building of theoretical framework on the research topic marketing, such as market structure, distribution chain, components of marketing mix, pricing system, involvement of different types of intermediaries like wholesalers, retailers, money lenders, aratdars, various types of marketing services like storage, packaging, mode of transportation, grading were studied. Again, in the process of distribution of fishes, services offered by dadandars, their involvement in market chain, exploitation of the fishermen by the dadandars were covered through literature review. Moreover, opportunities and constraints of different government and non-government financial institutions like NGOs were studied in order to ensure free flow of renewable natural resources like fisheries in market chain as well as without exploitation of fishermen by dadandar system. Further, alternative marketing system will be developed for minimization of qualitative and quantitative losses of fishes in order to ensure the marketing efficiency in distribution chain.

1.3.3 Selection of Study Areas

The study covered coastal regions of Bangladesh. Six coastal villages were selected for study purpose where four are from Muslim villages and the remaining two from Hindu villages. The sample villages have been shown in Table 1. Dr. Ulrich and the CODEC authority finalized the mapping of the study villages. It seems that the selected villages will fully represent the coastal communities and thus, it seems to be homogenous in context of socio-econo-political environmental factors.

Table 1 : Break –up of Sample Villages

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

1.3.4 Primary Data Collection

Primary data collection were made through the use of questionnaire method. Before the administration of the questionnaire, the draft questionnaire was modified by Dr. Ulrich Kleih and his team. Their valuable suggestions were incorporated in the finalization process of the questionnaire. Further, a pilot survey was conducted in the month of October 2001, for the period from 21st October through the 30th October. The four investigators and one co- investigator conducted the pilot survey under the guidance of the SUFER Project researcher. It is noted that these field investigators were trained by two international experts from the field of research methodology CODEC Training Center (CTC), Isa Nagar, Chittagong, was used as the venue of the training programme. The training period was between the 6th July – 9th July in 2001. Dr. P.K. Matiur Rahman, Professor of Statistics, Dhaka University and Mr. Joachin Victor Gomes an international expert, offered training about the main theme of the project and other relevant aspects of data collection through questionnaire method.

1.3.5 Secondary Data Collection

Both primary and secondary data were used in the study. Secondary data were collected from different published documents of the Government like Economic Survey Reports, Five Year Plans and Statistical Yearbooks. Further, various publications of national and international organizations like NGO Forums, CODEC, DFID, NRI etc. Moreover, necessary information were collected from the Ministry of Fisheries, Government of Bangladesh, and other semi-government and government offices. Thus, these collected data were processed in the context of the requirements and objectives of the research project.

1.3.6 Sample Size

The total sample respondents were 600. Among them, 300 fishermen were selected from the six study villages, taking fifty from each village. Again, 300 traders were selected from 3 landing centers as well as from the most dominant fish distributions centers of Bangladesh. These include Cox's Bazar, Chittagong and Dhaka fish markets. The break-up of the study areas, period and investigators has been shown in Table 2.

Table 2: Shows Study Areas, Period and Investigators Involved in Data Collection

Study Areas		Period of Data Collection	People Involved in Data Collection
District	Village		
Cox's Bazar Cox's Bazar Market	Kuruskhul	November 10-24, 2001	Co-investigator: 15 days Four investigators: 15 days Two experienced field workers: 15 days Researcher: 3 days
Chittagong Chittagong Market	Salimpur	December 1-15, 2001	Co-investigator: 15 days Four investigators: 15 days Two experienced field workers: 1 month Researcher: 9 days
Patuakhali	Kuakata	January 1-10, 2002	Co-investigator: 10 days Four investigators: 10 days Two experienced field workers: 10 days Researcher: 10 days
Patuakhali	Lebokhali	January 11-20, 2002	Co-investigator: 10 days Four investigators: 10 days Two experienced field workers: 10 days Researcher: 10 days
Bagerhat	Debraj	January 21-30, 2002	Co-investigator: 10 days Four investigators: 10 days Two experienced field workers: 10 days Researcher: 10 days
Satkhira	Kullahpara	February 1-20, 2002	Co-investigator: 20 days Four investigators: 20 days Two experienced field workers: 1 month Researcher: 3 days
Dhaka Market		April - May, 2002	Two experienced field worker Researcher

1.3.7 Data Entry and Compilation

The collected data have been processed and checked for ensuring consistency. The data entry programme has been started from January, 2002. In the meantime, the coding and editing of the data were completed as per tabulation plan of the study. In the various stages of data processing, some data insufficiencies and gaps were pointed out. In such a situation, the experienced field workers filled in the data gap in the months between April to May, 2002. The collected data were analyzed to prepare report on the research topic.

1.3.8 Analysis of Collected Data

In the process of analyses of collected data, various statistical tools like overages, percentages, tables, graphs and diagrams were applied in order to make the study worthier, informative and useful for the purposes.

1.4 Limitation of the Study

The study has been conducted on six coastal villages of Bangladesh. But it would enrich the study by making it more qualitative and representative if more villages were covered for the purpose. In the context of traders 300 samples, were studied from three large wholesales and retail centres of the study areas. If representative samples from all over Bangladesh could have been taken, the study would have become full-fledged and more representative. However as the macro marketing environment is homogenous in features, characteristics and similar in otherwise relevant matters, the output of the study is representative in character. In the light of the outcome of the research study, it wills open-up new directions for further research in the concerned field.

Chapter # 2 : Supply and Demand

2.1 Supply Situation

Among the different sectors of economy in Bangladesh, the share of agricultural in GDP has been declining and the industry sector remain more or less same over the years since last few decades. In such context, fishery can contribute in various ways in the economy of Bangladesh viz. (i) creating employment opportunities (ii) earning foreign exchanges by exporting fish (ii) source of food protein for lower income group of people and the likes. Available literature evidences that the rate of growth from 1984-95 to 1997-98 were 3.39, 10.47 and 3.07 in the case of inland capture, inland culture and marine fish respectively.

2.1.1 Harvesting of Fishes

Marine fishery offers a complex, multi species resources in Bangladesh economy. These are about three hundred species of fish and 250 species of prawns in Bangladesh (Rahman 1984). The fisheries resource of the country is generally classify as marine capture fishery and inland capture fishery. Table-3 shows the fish supply situation of the country.

Table-3: Supply situation of fish of Bangladesh (in Metric Ton)

Year	Marine Capture	Inland Capture
1991-92	2,45,474	4,79,742
1992-93	2,50,492	5,32,419
1993-94	2,53,044	5,73,376
1994-95	2,64,650	5,91,145
1995-96	2,69,702	6,09,151
1996-97	2,74,704	6,09,900
1997-98	3,10,000	6,45,000
Source: Department of Fisheries July,2001		

Table-3 shows that in a period of seven years , marine capture fishing on the average accounted for 50% of the inland capture fishery. Again, it has dominated the marine fishery contributing 24% of the total harvesting of fish. Reportedly, since the last decade the harvesting of marine fishes has been declined abnormally. But the literature and field survey indicates the trend is not lines for all types of fishes.

2.1.1.1 Purpose of Harvesting

The coastal fishermen communities in general are two types such as rich and poor fishermen. The poor fishermen work as a daily labour in the activities of fish catching in deep sea. The purpose of harvesting of fishes has been shown in table-4.

Table-4: Purpose of harvesting fish in deep sea

Fisherman harvest in deep sea to sale	Percentage(%)
At producing place to the floating Paiker	31.70
At the local landing place	16.32
At large Arat directly	51.98
Total	100.00

Table-4 portrays that the purpose of fish catching in deep sea are to sell directly to the Aratders , to the floating Paiker and to the local landing place in terms of percentages 51.98%, 31.70% and 16.32 % respectively.

2.1.1.2 Distribution of Fishermen According to Landing Site

Landing site is an important aspect in marketing of marine fishes. In study areas, landing sites are in two categories such as landing at deep sea and landing at off shore.

Table: 5 Distribution of the fisherman according to Landing Site

Landing Site	Percentage of fisherman
Deep Sea	34
Off-shore	65
Both	1
Total	100

Among the respondents, 65% carries their catches for landing at off shore and 34% disposed of their fishes at deep sea after catching.

2.1.1.3 Technique Used In Fishing

Artisional as well as modern technologies have been used in fishing.

Table 6: Distribution of the fisherman according to the technique used in fishing

Technique Used	Percentage of fisherman
Traditional	69
Modern	29
Both	2
Total	100

The survey data reveal that 69%, 29%, and 2% of the respondents have been used the techniques of 'traditional', 'modern' and 'both' categories in catching fish in sea .

2.1.1.4 Time Passes Between Catches and Landing

Marketing efficiency of perishable produces like fisheries depend upon a number of logistic supports. In such context, we were interested to know from our sample respondents about time passes between catching and landing of fishes in selected study areas.

Table 7:Time passes between catching and landing

Time passes between catching and landing	Percentage
1 day	17.33
2 to 4 days	5.11
7 to 10 days	77.56
Total	100.00

The survey data portrays that 77.56%, 17.33% and 5.11 of the respondents mentioned times passes between catching and landing from '7 to 10 days', '1 day' and '2 to 4 days' respectively .

2.1.2 Preservation System

At this stage we were interested to know from the respondents about the preservation system of fishes in study areas. It is noted that fish is a perishable produce. The price, value and quality of fishers is directly linked with the adequate and scientific preservation system.

Table 8: preserving the fishes

System of preserving the fishes	Percentage
With Ice	79.34
Without Ice	20.66
Total	100.00

Among the respondents, 79.34% preserve the fishes with ice where as 20.66% preserves their fishes without ice .

2.1.3 Seasonal Variations in Harvesting

The season of fish catching may be divided into two :

(a) Peak season and

(b) Lean season

Peak season covers the month of April through September of a year whereas the lean season includes the month from October to March.

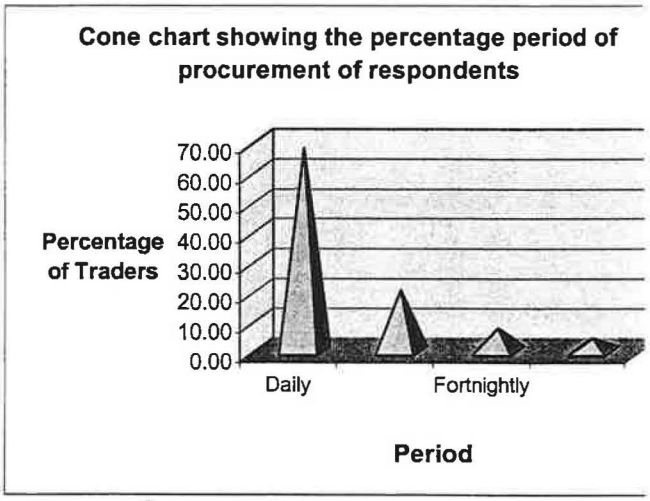
Reportedly, fishes are seasonal produces. The season will be divided into two categories viz., peak and lean season. Peak season starts from April and it continues up to the month of September. Again, lean season continues between the month of October to March of a year. Among peak season, the daily average fish catching in kg

is the highest in the month of August which is followed by July, June, May, April and September respectively. In peak period, the fishing villages are crowded by fishermen, different types of intermediaries and other interest groups. It appears that the peak season open up different types of opportunities for earning of fishermen. In this period, all the member of the fishermen family are engaged in different types of livelihood activities. Fishermen remain busy in catching whereas other members of the family are involved in fishing supportive activities for more earnings of their families. Again, the lean season will start from October and it will continue up to the month of March. During the period of lean season, the highest percentage of daily average fish catching is in the month of October and the lowest average fish catching is in kg in the month of January (Cone Chart 1).

Cone Chart 1

Period of procurement/purchase

Period	Frequency	Percentage
Daily	203	67.67
Weekly	61	20.33
Fortnightly	23	7.67
Daily and weekly	13	4.33
Total	100	100.00



Cone chart 1 shows that the daily average fish catching is 342.67 k.g. per fishermen in study village. It shows that in the peak season, the highest catch is 800 k.g. in the month of August and the lowest catch is 380 k.g. in the month of September in terms of percentages 19.45% and 9.24% respectively. Again, in the lean season, the highest catch is 241 kg in the month of October whereas the lowest catch is 20 kg in terms of percentages 5.86% and 0.48%.

In coastal fishing villages, the livelihood of the fishermen families dependent directly or indirectly on fish catching, drying, trading, transporting and other related activities Reportedly, the amount of fish catching is decreasing day by day in sea. For the better livelihood of coastal fishermen, it seems that alternative income generating activities are required for their survival. Thus, skill development in different types of trades may play a significant role for the better livelihood system of coastal fishermen. Family based enterprise development may contribute positively in this regard. All members of family would be exposed as the sources of earners instead of consumers of family income. NGOs, Government department and other voluntary organizations role could be

appreciated for this purpose. Thus, the development process may contribute in the poverty elimination of coastal fishing communities of Bangladesh.

2.2. Demand Situation

At this stage, the following issues have been analysed for examining demand situation of marine fishes:

2.2.1 Demand Consideration

Population pressure has resulted in a large fall in annual per capital fish consumption over the last few decades. However, a number of factors are to be considered in demand of natural resources like fisheries. These factors are product line (combination and mix), Product size, marketing channel, market size, target market, seasonal variation in consumer tastes, preferences and the likes. Reportedly, scarcity of fish is a major factor contributing to protein deficiency which is believed to affect more than 80 percent of Bangladeshi households.

2.2.2 Location-wise Demand and Selling Price

A look into the price behavior of fresh fishes is essential to understand the fish marketing system from the coastal areas of Bangladesh. Changes in the prices of fishes in the various markets of the study areas have been examined. .Price behavior of fishes depends upon a number of factors such as species of fish, size of fish, availability of alternative species, quality of fishes, over- all economic condition of the people supply behavior of fish in the market and seasonality (Hasan and Carleton 1999). It seems that the demand for fish differs greatly due to the seasonality. Although some fishes are seasonal renewable resource, yet it is found available more or less almost throughout the year. The supply and demand forces account for price fluctuation to a great extent (Shaheen and Solaiman, 1993). It is said that the price is the consideration for the exchange of goods between the buyers and sellers and is expressed in terms of money. In such a background the seasonal price variations of selected species of fish have been made under the following captions.

2.2.2.1 Average Price at Peak Period

We were interested to know from the respondents about the average price at peak period of two fishes viz. Hilsha and Rupchanda. Data collected in this regard have been shown in table- 9.

Table – 9 Peak Period average price (Taka per kg.)across the country

Occupation	Hilsha	Rupchanda
Aratder	92	135
Paiker	85	150
Money lender	56	-
Wholeseller	99	142
Retailer	110	160
Vendor	72	-

Table- 9 shows that between the two fishes, retailer's price is the highest across the country. The prices are Tk. 110.00 and Tk. 160.00 in the case of Hilsha and Rupchanda respectively. Again we were interested to know from the respondents about the peak period average price (Taka Per Kg.) area wise. The collected data have been shown in table-10.

Table 10 Peak Period average price (Taka per kg.) area wise

	Hilsha			Rupchanda		
Occupation	Dhaka	Chittagong	Cox's Bazar	Dhaka	Chittagong	Cox's Bazar
Aratder						
Paiker	105.00	75.00	65.00		150.00	
Money lender		55.00	55.00			
Wholeseller	110..00	100.00	75.00	140.00	135.00	130.00
Retailer	120.00	110.00	90.00	175.00	163.00	155.00
Vendor	75.00	70.00	70.00			

Table 10 shows that among the channel members, retailer's price is the highest in the case of Hilsha fish. The prices of this fish are Tk. 120, 110 and 90 in Dhaka, Chittagong and Cox's Bazar respectively. Again, in the case of Rupchanda, retailer's price is the highest among the different market intermediaries.

2.2.2.2. Lean Period Average Price

Data collected from the sample respondents about lean period average price (Taka per Kg. across the country. These have been shown in table- 11.

Table 11 Lean Period average price (Taka per kg.)across the country

	Hilsha	Rupchanda
Aratder	60	175
Paiker	140	175
Money lender	123	-
Wholeseller	170	160
Retailer	165	180
Vendor	-	-

Table 11 reveals that in lean period across the country, the Wholeseller's price is the highest among the different channel members in the case of Hilsha fish. Again, retailer's price is the highest in context of Rupchanda fish. Table –12 shows area wise average price of fish in lean period.

Table – 12 Lean Period average price (Taka per kg.) area wise

	Hilsha			Rupchanda		
	Dhaka	Chittagong	Cox's Bazar	Dhaka	Chittagong	Cox's Bazar
Aratder						
Paiker	150.00	150.00	140.00			170.00
Money lender		120.00	120.00			
Wholeseller	180.00	175.00	160.00	190.00	175.00	160.00
Retailer	180.00	200.00	160.00	200.00	210.00	170.00
Vendor						

Table –12 portrays that retailer's price in Chittagong, Dhaka and Cox's Bazar are Tk. 200.00, 180.00 and 160.00 respectively in the case of Hilsha fish. It is the highest price among the different market intermediaries. In context of Rupchanda fish, retailer's price is the highest among the channel members. The retailer's price are 210.00, 200.00 and 170.00 in Chittagong, Dhaka and Cox's Bazar respectively.

2.3 Export Trend

During the last 30 years, export earning increased from US$3.17 million to 340 million during this period. The quantity and value wise export of fisheries products for the last 5years have been shown in table 13.

Table – 13 Showing Export of Fisheries Products

Year	Export Value (Mn US$)	Quantity (Mn. L.B)
1993-94	210.52	55.51
1994-95	305.64	78.36
1995-96	313.69	75.07
1996-97	320.73	76.05
1997-98	293.84	60.85

[Source: Alam, A.K.M.Nizamul – " Export of Shaimp & Fish From Bangladesh – Present Performance & Future Prospect." Dhaka International Sea Food 1999]

Table 13 shows that export trend of fishery resources is increasing from 1993-94 to 1996-97. It has been observed that the export trend is increasing and it is non-linear too. Reportedly, trend of export marketing of dry fish is expanding day by day in USA market, Middle East and other areas of the world market.

Chapter # 3 : Marketing of Fish

3.1 Market Structure

Like many other perishable produces, fish passes from fishermen to consumers through different stages in market structure. Ahmed (1983) identified four distinct tires viz. primary market, secondary market, higher secondary market and consumer market in the process of distribution of marine fishes in Bangladesh. The intermediaries working in this market structure were found to be of various types. The types and functions of intermediaries operating in the different tires have been shown as follows:

Table – 14 Types and Functions of Intermediaries in the Market Structure

Tires of market structure	Intermediaries	Functions
Primary market	a) Mahajan b) Farria c) Dalal (local agent)	Assembling, buying, selling of fish after catching. For participation in the distribution process, local agent receives 1% commission for his services.
Secondary market	a)Wholesaler(Paikan) b) Distributor (Bepari or Chalani) c) Aratdar	In this market, intermediaries arrange auction for selling fishes. Aratdar also participates in the operation of markets through seasonal advances to the fisherman and short-term credit to the buyers. Aratdar receives 3% to 6% sales commission in this process. If credit is outstanding, he charges 6% service charge on sales. A person who has no credit support from aratdar, the service charge normally is 3% .
Higher secondary market	a) Bepari (Chalani) b) Local paikers (Nickaries) c)Wholesaler(Paikars)	In this stage, the Bepari or Chalani makes arrangement to distribute the produces in the different distribution market. These markets are known as wholesale market of different district town of the country. Bepari sells it to local retailers as well as wholesalers. In this process, local aratdars participate in buying and selling functions taking service charges normally between 3%- 6%.
Consumer market	a) Local wholesaler b) Retaiten (Nikaries)	Paikers sell fishes to Nikaries and mobile vendors. These Nikiaries and mobile vendors sell the fishes at different upazilla as well as union level village markets. These village markets are known as 'Hat'. Final consumers purchase their required fisher from this hat. In the city, mobile vendors reach to the doors of consumers with his fishes.

The survey data reveal that fishermen participation in the market structure is negligible. Among their catches, a small portion they sell to the consumers, mobile assembler and other intermediaries. It has been reported that the price is fixed by the buyers. But 'dadandar' and other market intermediaries play an important role in buying and selling process of fish in study areas. Thus, it is evident that the fisherman are often compelled to sell their fishes at a poor price offered by market intermediaries through a manipulative process.

3. 2. Trade Flows

Chart 1 : Showing Distribution of Fish from Fishermen to Consumers

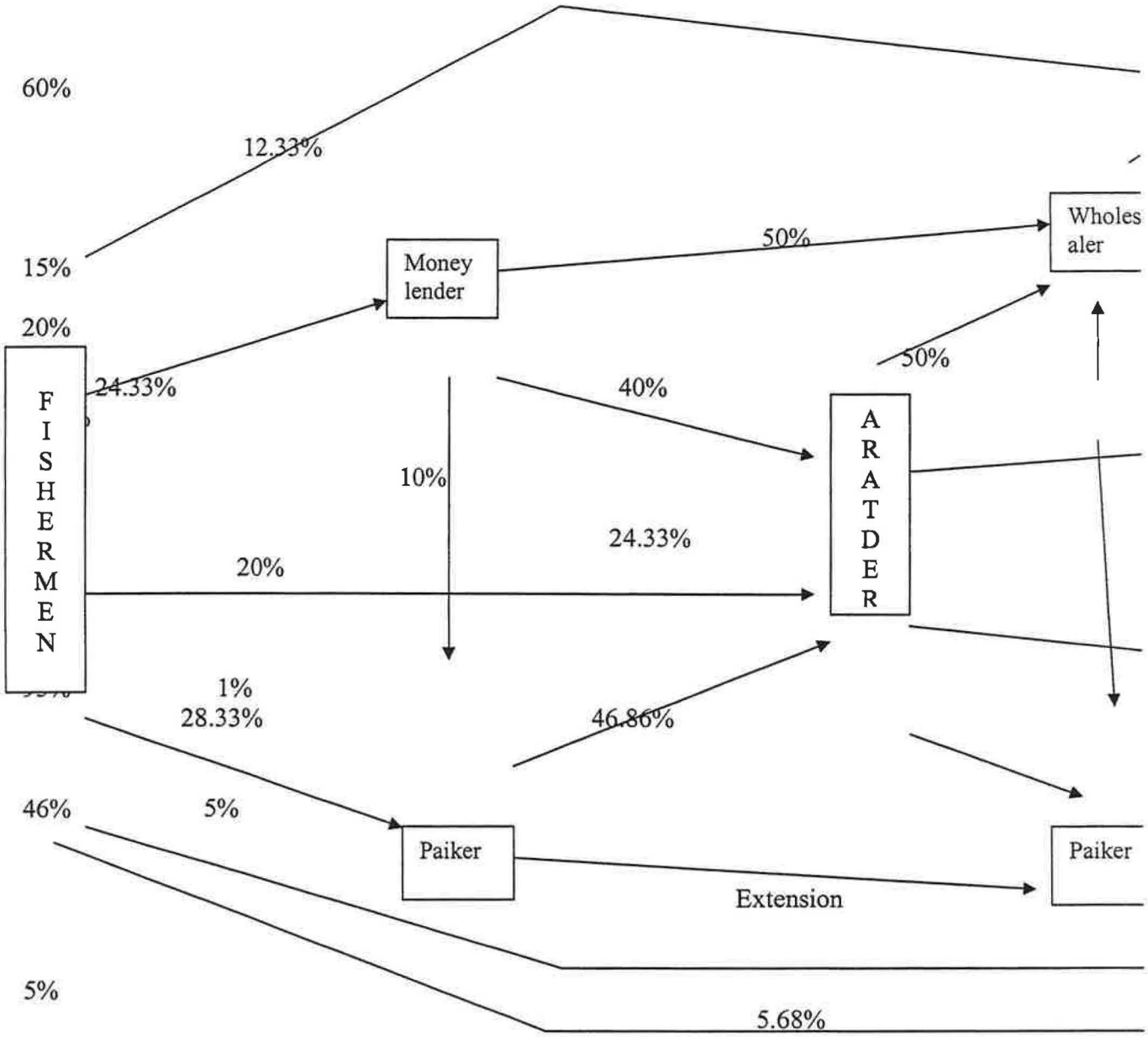


Chart 1 shows distribution of fishes in percentages from fishermen to consumers. It portrays that 28.33%, 24.33%, 12.33%, 5.68% and 5% of total catches of fishermen distributes to paiker, money lenders, retailers, vendors and consumers respectively. Aratdar plays a significant role in fish marketing network. It reveals that aratdars procure fish from paikers, money lenders and fishermen in terms of percentages 46.86%, 40% and 24.33% respectively. Aratdar sells fishes to the wholesalers, paikers, retailers, vendors. Again, consumers purchase fishes from various sources, viz. wholesalers, retailers, vendors and fishermen. It is noted that consumers purchase only 15% from wholesalers, 5% from fishermen and the rest from retailer and vendors. Vendors supply fishes to the consumers through door-to-door services and retailer sells the fishes to the consumers in retail fish markets. It has been observed that if the fishermen takes loan from the "dadanders", he consequently loses control over the channel of distribution. In Hindu villages, the fishermen takes loan from financially sound, politically established money lenders for security of his family members from ethnical as well as free distribution of his catches to the different types of intermediaries like paikers, aratders, vendors, and the likes. Thus, the fishermen are deprived of getting fair price of their produces, on one hand, and the final consumers/ uses are compelled to pay higher price as demanded by the traders, on the other. But broad based marketing net – work is a pre-requisite for marketing productivity of natural resources like fisheries. Moreover, the chain of distribution demand different types of marketing services like environment oriented packaging system, refrigerated transportation for avoiding losses quality of produces, cold storage system for minimizing quantitative losses of fish. Thus, it will create opportunities for the development of back ward linkage industries in the country. The process may open up investment opportunity as well as job opportunities for the people. Moreover, the value added process will maximize return from investment for all the concerned interest groups involved in fish distribution from coastal areas of Bangladesh.

3.3 Marketing Infrastructure

3.3.1 Landing Site

For efficient handling of fishes, adequate and scientific landing facilities are required. In the context of condition of available landing sites, it will be classified in two categories viz. constructed and non-constructed. Relevant data have been shown in table-15.

Table : 15 Condition of Landing Site

Condition of Landing Site	Frequency	Percentage
Constructed	38	12.8
Non-constructed	256	85.44
No response	6	1.76
Total	300	100

The survey result evidence that 85.44% use non-constructed landing site whereas only 12.8% use constructed landing site for the distribution of their catches.

3.3.2 Charge for Landing

Fishermen are enjoying different types of services from the landing site in the process of marketing of their fishes. Data shows in table-16 in this regard.

Table : 16 Whether the fisherman has to pay any charge for landing

Whether to pay any charge for landing	Frequency	Percentage
Yes	261	87.00
No	39	13.00
Total	300	100

Reportedly, 87% of the sample respondents pay a fixed amount of charge for landing of their fishes at landing site. Again, 13% opined that there is no requirement of service charge for landing of their fishes at landing site.

3.3.3 Availability of Ice

At this stage, our query was to know from the respondents about the availability of ices in the study areas. Table 17 shows relevant data.

Table : 17 Whether ice is available

Whether ice is available	Percentage
Yes	91.42
No	8.58
Total	100.00

Among the respondents, 91.42% opined that ice is available whereas 8.58% mentioned ice is one of the main problems for preserving their fishes. In Bagerhat, some respondents mentioned that ice is available in lean season. But the supply of ice is not adequate in peak season. It seems that due to its characteristics ice will not be preserved for long time after production. So in the peak season, there is a gap between the demand and supply of ice which hinders in efficient marketing system of marine fishes.

3.3.4 Sources of Ice

In study areas, ices are procured by the sample respondents from two sources for the preservation of their catches. These are 'preservation of ice at boat during the period of catches at deep sea' and 'purchase it from floating seller'. Relevant data have been shown in table-18.

Table : 18 Sources of Ice

Source	Percentage
The fisherman preserve it at the time of journey	91.42
Purchase from floating seller	8.58
Total	100.00

It is evident from the survey result that 91.42% respondents preserve it at their boat when they are in deep sea and only 8.58% respondents procure it from the floating sellers in the study areas.

3.3.5 Cost of Ice

Ice is required for holding of fishes under proper condition between the time of their catches and final sale to the consumers. In some cases, fishes are caught in a particular season but it is consumed throughout the year in Bangladesh. As it is known that fishes are perishable produce, for proper preservation, sufficient number of ice is a must for maintaining the quality of fish.

Table : 19 Costs of ice

Costs in Taka	Frequency	Percentage
100 – 500	6	2.00
500 – 1000	37	12.33
1000 – 2000	42	14
2000 – 5000	18	6
5000 – 10000	92	30.67
10000 – 20000	21	7.00
20000 – 50000	53	17.67
50000 and above	31	10.33
Total	300	100.00

Again, the consumer price of fish depends on to some extent on the cost of ice. Thus, the survey result as regard cost of ice shows that 30.67% of respondents incur 'Tk. 5000-10,000' for the purpose of ice. Further, it has been opined that 17.67%; 14.00%; 12.33% 10.33% spent Tk. between '20000-50000', '1000- 2000', '500-1000' and '50000 and above' respectively for the purchase of ice.

3.4 Storage System

Storage refers to the holding of procedures under proper conditions between the time of their production and their final sale (Fredrick 1940). Fish is perishable produce. So, preservation is more important in the case of fish. As it is known that sufficient

number of cold storages is a must for preservation of fishes so government patronization and private initiative is highly essential in this perspective.

Table 20 Storage system of the traders

Storage system	Number of traders	Percentage
Cold storage	4	1.33
Traditional system by using ice	284	94.67
Private preservation store with ice	4	1.33
Cold storage and private preservation	8	2.67
Total	300	100.00

Table 20 shows the preservation system of fishes by traders in the study areas. It reveals that among the respondents, 94.67% preserve their fishes through traditional system by using ice, 2.67% preserve their catches through cold storage and private preservation system; 1.33% opined cold storage and private preservation store with ice as their modes of storage system. It seems that efficient cold storage system can minimize the quality losses of fishes and the demand for cold storage service may motivate the entrepreneurs to invest more in the cold storage business. Thus, it will help development of backward linkage industries in the country.

3.5 Transportation

Lack of adequate and good means of transportation between the areas of fish catching and the centers of their marketing hinders the movement of fish produce and makes primary marketing costly (Rahamn 1973). Reportedly, the various modes of transport used by the middlemen involving fish marketing are truck, van, rickshaw, boats and others. Some of the middlemen also resort to the dual modes of transport such as van plus rickshaw, boat plus rickshaw and truck or train.

Table 21 Mode of transport according to the different traders (in percentage)

Traders	Mode of transport								Total
	Truck	Van	Rickshaw	Boat	Others	Van + rickshaw	Boat + truck	Truck / train	
Aratder	1.67	0.33	0.00	3.33	0.00	0.00	4.00	1.33	10.67
Retailer	0.33	9.00	15.33	0.33	0.33	14.67	0.00	0.00	40.00
Whole seller	13.67	0.00	0.00	0.00	0.00	2.67	0.00	3.67	20.00
moneylender	0.00	0.00	0.00	0.00	0.00	10.00	0.00	0.00	10.00
Vendor	0.00	0.00	6.00	0.00	4.00	0.00	0.00	0.00	10.00
Paiker	0.67	0.67	0.67	1.00	2.67	3.67	0.00	0.00	9.33
Total	16.33	10.00	22.00	4.67	7.00	30.67	4.00	5.00	100.00

Table 21 reveals that 30.67% , 22%, 16.33%, 10%, 5%, 4.67% and 4% of the respondents mode of transportation in fish distribution in the stays areas are 'Van plus Rickshaw', 'Rickshaw', ;Truck', 'Van', 'Truck/Train', 'Boat', and 'Boat plus Truck' respectively. It, further, reveals that 7% use indigenous transportation method in carrying their fishes. The present study evidences that non availability of transport facility inhibits the effective marketing of fishes in study areas to a great extent.

3.6 Packaging System

The functions of packaging are firstly to contain adequately a convenient quantity of the product to protect it in transit and to aid in its safe delivering to the customers (Francise 1980). The data collected in this regard have been shown in the Table 22.

Table 22 Type of packaging system

Type	Frequency	Percentage
Wood made box	45	15.0
Bamboo made besket	218	72.7
Plastic tray	26	8.7
Others	11	3.6
Total	300	100.0

Among the respondents, 72.7%, 15%, 8.7% and 3.6% use the packaging system of 'bamboo made basket', 'wood made box' 'plastic tray' and others respectively. It appears that the fishes may be packed in layers and an inch or more by bulge may be used for the purpose. Further, extra cleats on the covers may be used to serve to protect the upper layer fishes from quality deterioration. The sample respondents opined in favor of comfortable and scientific packaging system. Thus, it protects the quality of fishes from deterioration, and freshness of fishes may be ensure to be intact. It positively affects the efficiency of marketing of fish in the study area.

3.7 Grading System

Graded goods conforms to the different quantities expected by different consumers according to their paying capacity or satisfaction expected. It also helps in streamlining handling and transporting of fish produces as otherwise different grades of different quantities brought from different fishermen have to be transported separately (Amar Chand & Varadharazon 1979). It has been observed that fishes are graded in context of freshness, because fresh fish sells at higher price. There is a market segment for rotten fish. In some cases, fishes are graded according to size. But it is noted that lack of scientific techniques of grading hinders the efficiency of the fish marketing system in the study area.

3.8 Quality Assurance

Quality is considered as one of the important components of marketability of products. It is more true in case of perishable commodity like fisheries. Reportedly, it has been found that down grading, discarding, wastages and others are some of the important pitfalls that occur due to the non-assurance of the quality of fisheries in Bangladesh and also due to the non practice of quality control measures in the fish markets. It has also been observed that the fish market are not regularly inspected by the market inspectors.

Even if they go to the market places for inspection, they happen to fail in discharging their duties owing to unethical and immoral practices.

Chapter – 4 Intermediaries and Marketing Margins

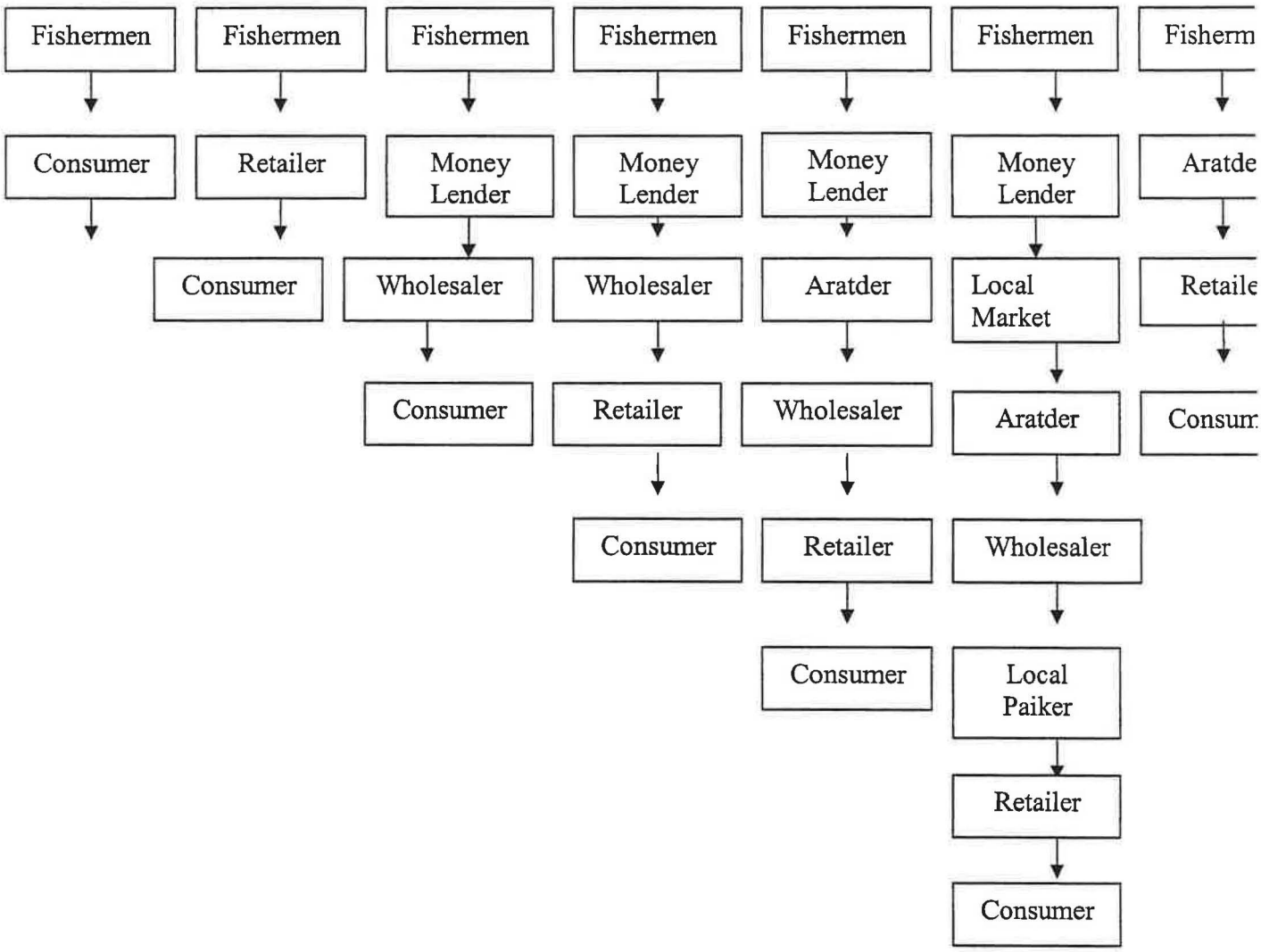
4.1 Marketing Channel

A channel of distribution for a product is the route taken by the title to the product as it moves from the producer to the ultimate consumers or industrial users (Stanton 1987). Moreover, channel of distribution stands for the various company activities that make the produce available to target customers (Kotler 1988). Further, a product can not make profitable sales unless it is made available when and where a customer wants it (Jha 1985). Again, marketing channel decisions are among the most complex and challenging situations facing the firm. Each channel system creates a different level of sales and costs. Once a distribution channel has been chosen, the firm usually must stick to it for a long terms. The chosen channel strongly affects, and is affected by, the other elements in the marketing mix (Kotler & Armstrong 1995).

4.1.1 Marketing Channel at Landing District

An analysis of the collected information reveals that fishes reach the ultimate consumers/ users through different intermediaries concerned with buying and selling at various stages of distribution channel. The eleven different channels of distribution that were found in the course of study in sample landing centers are presented in Chart 2.

Chart 2 : Fish Distribution Channel (Inside the Landing Districts)



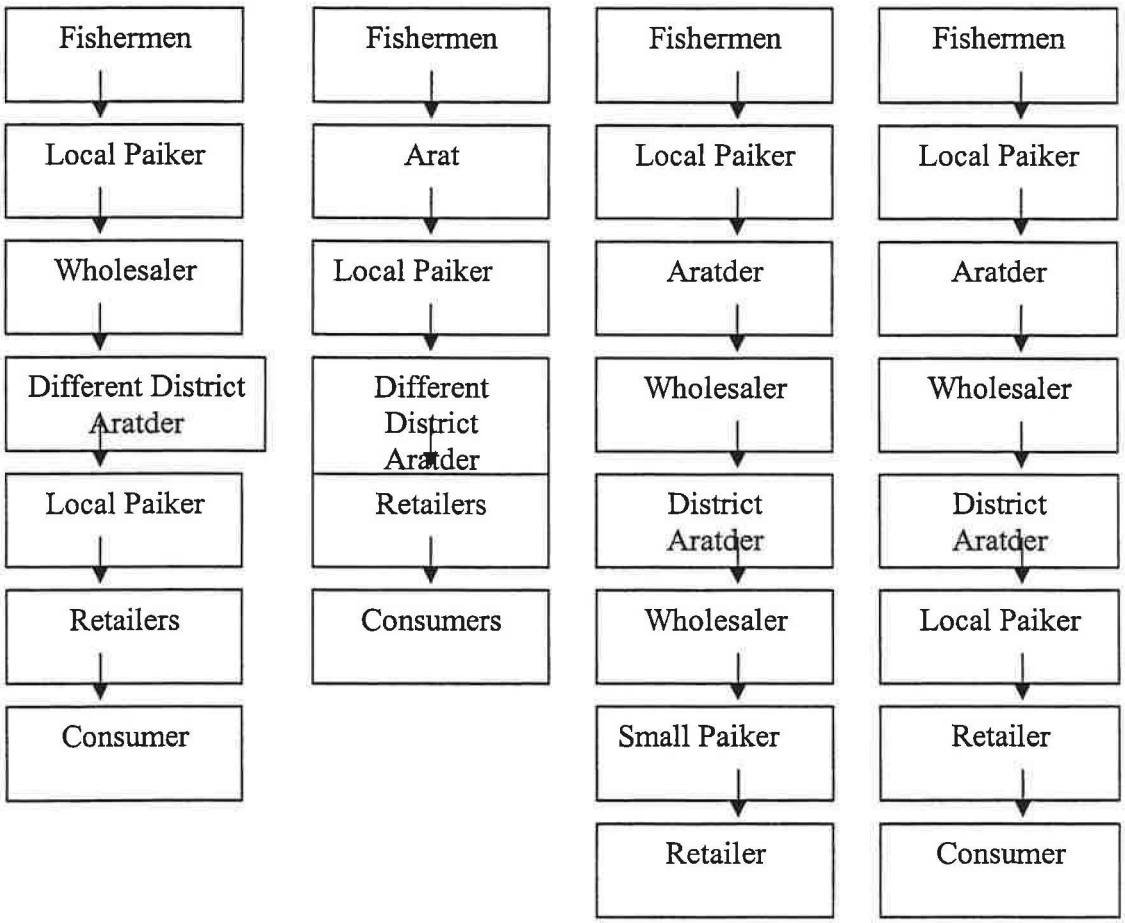
The chart 2 portrays that a long chain of intermediaries is involved in passing the fishes from fishermen to consumers through different channels. The most simple and direct channel is channel number – 1. Fishermen directly sells their catchers to the ultimate consumers through this channel. The remaining ten channels are indirect ones and comprise different types of middlemen like money lender, local paiker, aratdar, mahajan, faria, dalal (local agent), wholesaler (paiker), distributor Bapari/chalani), local retailers (nikaries)]

An analysis of the findings and our observation reveals that about 10.68% of the fishermen reach the consumers through direct channel and the rest through indirect channel. The fishermen distributes the fishes through different market intermediaries. These middlemen are mainly moneylenders, aratdars and local paikers.

4.1.2 Outside of the landing District

At this stage, we were interested to know about the various channel of distribution of fishes in outside the landing districts.

Chart 3 : Fish Distribution Channel (Outside the Landing Districts)



The chart 3 reveals that there are five channels involved in the process of fish distribution. It has been reported that these middlemen are basically two types viz. agent middlemen and merchant middlemen. Agent middlemen includes local market aratder, district market aratder, dalal, local agent and the likes. For their services, they take service charge from the seller of the fishes. The service charge may be taken in terms of commission/ brokerage. Again, the merchant middlemen purchase the title of fishes and they involve in fish business in competitive marketing environment. The chart further portrays that a long chain of intermediaries is involved with the massive fish marketing in study areas. Reportedly, the marketing cost as well as profit margin at each layer of this long channel enhance the final price of fish.

4.2 : Cost Benefit Analysis

Market margin is the gap between the price received by the supplier of produces and the price paid by the ultimate consumers. One of the major problems of marine fish marketing is that the fishermen are often deprived of fair prices for their catches. This is perhaps the effect of large price spread among the different market intermediaries. The large price spread enables the middlemen to reap the maximum benefit from the marketing operation and thus, it is important to study the percentage of margin of different intermediaries involved in the fish marketing chain. Fishermen distribute fishes to the different types of market intermediaries, viz, money lenders, retailers, vendors, paikers and aratders. In this process, two markets are involved viz., wholesale market and retail market.

4.2.1 Wholesale Market

In Bangladesh, the catch of fishing craft is disposed of , after the owner and crew members take small quantities for have consumption in various ways. It has been reported that wholesale market play an important role in the flow of fishes from fishermen to consumers through different market intermediaries. Among the various wholesale markets, three representative markets such as Dhaka, Chittagong and Cox's bazaar markets have been covered in this research.

4.2.1.1 Dhaka Market

In this survey, Dhaka market means 'Jatrabari market' Dhaka. The relevant data have been collected from this market. Table 23 shows average daily marketing cost and benefit of Dhaka wholesale market.

Table – 23 Dhaka Wholesale Market

Traders	Average selling quantity (in ka.	Average selling price (per ka.)	Average Purchase quantity (in ka)	Average purchase price (per ka)	Other marketing cost (per kg)	Gross margin (per kg)	Percentage of margin (5)
Money lender	--	--	--	--	--	--	--
Paiker	230	134	234	118	1.48	14.72	10.63%
Aratder	1215	6*	1215		1.65	4.35	4.35%
Wholesaler	615	150	620	140	2.35	7.65	5.1%
Retailer	195	170	200	145	4.45	20.55	12.88%
Vendors	30	83	30	69	2.5	11.5	13.85%

[N.B. Aratders do not take the title of the transacted fishes but charge the commission on selling price as a mediator.]

Table 23 shows that in context of purchasing the quantity arathdar ranked the first (kg 1215), wholesalers the second (kg 620), paiker the third (kg 234), retailer the fourth 200 and the vendors the fifth (kg 30). In the light of average selling quantity, arathdar held the first position (kg 1215), wholesales the second (kg 615), paiker the third (kg 230), retailer the fourth (kg 190) and vendor the fifth (kg 30). Marketing cost is the most important component of the price offered by the ultimate consumers. Marketing cost behavior analysis helps the different stakeholders in taking decision regarding buying and selling of fishes. The survey data evidence that retailers average marketing cost is the highest among the different intermediaries in per kg. (tk. 4.45); the second (tk. 2.5), wholesaler the third 2.35 aratdar the fourth (tk. 1.65) and paiker the fifth (tk. 1.48). The survey data portray that the percentage of profit margin of vendor, retailer, paiker, wholesaler and aratder are 13.85%, 12.88%, 10.63%, 5.1% and 4.35% respectively.

4.2.1.2. Chittagong Market

The landing centre of marine fishes in Chittagong is known as 'Fishery Ghat'. Relevant data have been collected from this centre for research purpose. These have been shown in table 24.

Table – 24 Chittagong Wholesale Market

Traders	Average selling quantity (in ka.	Average selling price (per ka.)	Average Purchase quantity (in ka)	Average purchase price (per ka)	Other marketing cost (per kg)	Gross margin (per kg)	Percentage of margin (5)
Money lender	63	114	65	87	2.83	28.17	23.87
Paiker	60	125	62	109	2.91	13.09	10.47
Aratder	2100	4*	2110		0.79	3.21	3.21
Wholesaler	390	141	394	127	2.65	11.35	8.05
Retailer	145	165	148	133	4.48	27.52	16.68
Vendors	24	78	28	65	2.36	10.64	13.65

Table 24 shows that aratdar's selling quantity is the highest among the different channel members in fish distribution chain. It has been observed that the marketing cost per kg. incurred by retailer, paiker, wholesaler, vendor and aratdar are taka 4.48, 2.91, 2.65, 2.36 and 0.79 respectively. The research point out that the percentage of profit margin enjoyed by the moneylenders is the highest by performing dual functions like money lending as well as marketing of marine fishes.

4.2.1.3. Cox's Bazar

This district is known as the landing district of marine fishes in Bangladesh. The survey data portrays that the aratdar's position is the highest in context of purchase and selling quantity of marine fishes. Relevant data have been shown in table 25.

Table - 25 Cox's Bazar Wholesale Market

Traders	Average selling quantity (in ka.	Average selling price (per ka.)	Average Purchase quantity (in ka)	Average purchase price (per ka)	Other marketing cost (per kg)	Gross margin (per kg)	Percentage of margin (5)
Money lender	75	122	75	88	2.37	31.63	25.93%
Paiker	210	131	215	115	1.91	14.09	10.76%
Aratder	1450	4*	1450		1.55	2.45	2.45%
Wholesaler	380	138	385	127	4.02	6.98	5.06%
Retailer	246	161	250	135	2.72	23.28	14.45%
Vendors	25	90	25	75	2.2	12.8	14.22%

Table 25 shows that marketing cost of market intermediaries like wholesaler, retailer, vendor, paiker, and aratdar's are Tk. 4.02, 2.72, 2.20, 1.91 and 1.55 respectively. The survey data portray that the percentage of profit margin of money lender, retailer, vendor, paiker, wholesaler and aratder are taka 25.93%, 14.45%, 14.22%, 10.76%, 5.06% and 2.45% respectively.

Reportedly, for the benefit of fisheries sector, the alternative system needs to be evolved for the better benefit of fishermen community. NGOs may explore new avenues by offering different types of credit and saving services for the betterment of the overall condition of the fishing community.

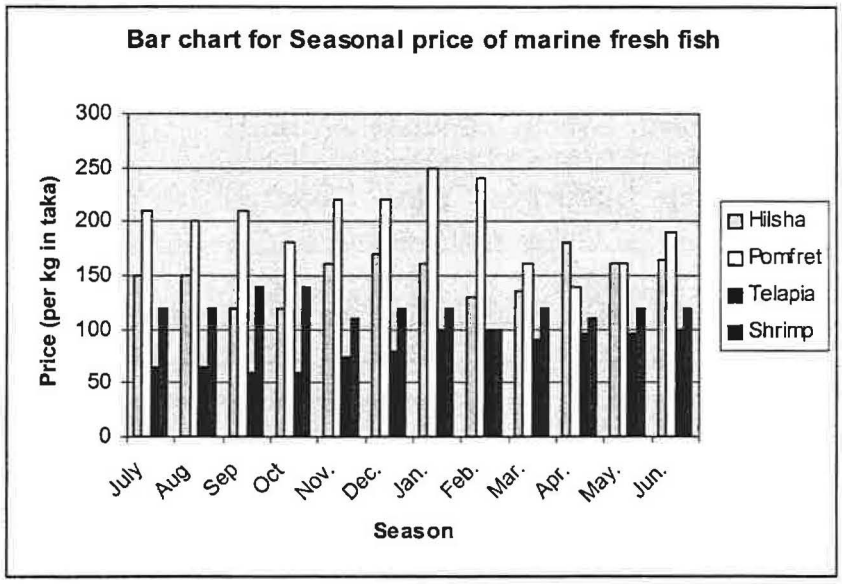
4.2.2 Retail Market

4.2.2.1 Dhaka Retail Market

For studying seasonal fish price variations, Dhaka market was covered as capital city of the country. Three segments of Dhaka fish retail market like Jatrabari Bazar, Hatirpool Bazar and Mirpur Bazar have been selected by us for the study purpose.

Jatrabari Bazar

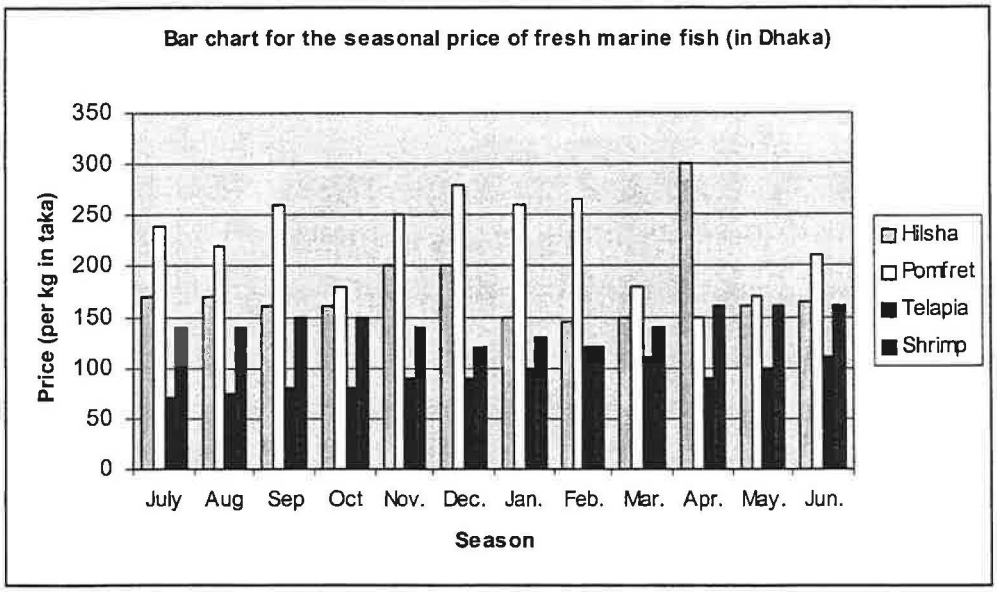
Jatrabari bazaar is one of the biggest fish market of the country.



Bar chart 1 shows that the Hilsha fish price is the highest in the month of April at Tk. 180.00 and it is the lowest in the month of September and October with a price of Tk. 120.00. The seasonal price variation is 37.5%. In the case of Pomfret, the highest price is Tk. 250.00 in the month of January and the lowest is Tk.140.00 in the month of April. The seasonal price variation is Tk. 78.57%. The price of Telappia is the highest in the month of January, February and June with a price of Tk. 100.00 and the lowest price is Tk.60.00 in the month of September and October. The seasonal price variation is 66.67%. In the case of shrimp, the highest price is Tk. 140.00 in the month of September and October and it is the lowest in the month of February with Tk. 100.00. The seasonal price variation is 40%.

Hatirpool Bazar

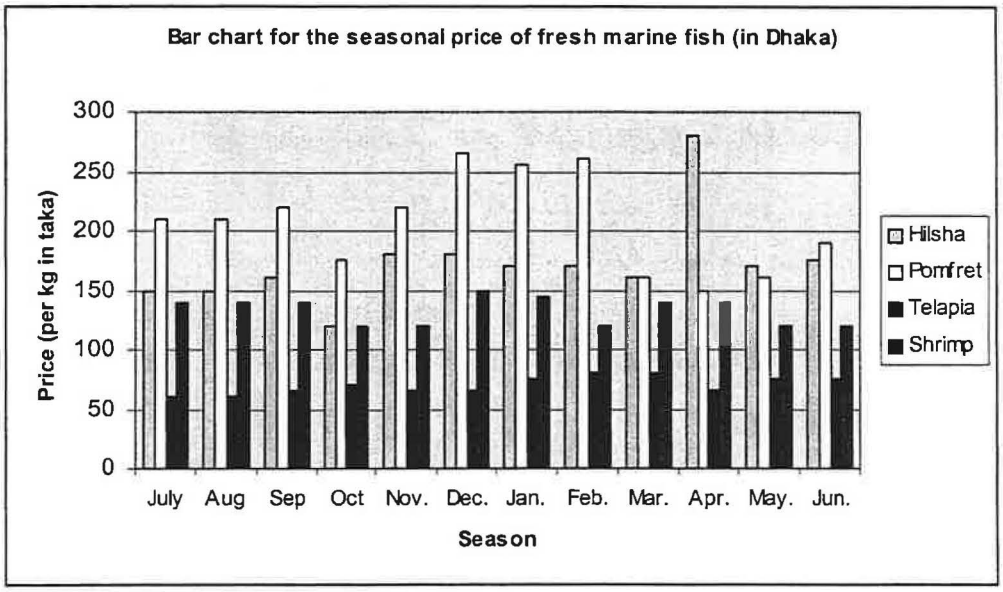
Hatirpool bazaar is one of the centrally located busy market of the Dhaka city drawing customers from different status groups.



Bar Chart 2 shows that Hilsha price is the highest in the month of April with price Tk. 300.00 and the lowest price is Tk. 145.00 in the month of February. The price variation is 106.89%. In case of Pomfret, the highest price is Tk. 280.00 in the month of December and the lowest price is Tk. 150.00 in the month of April. The price variation is 66.66%. In case of Telapia, the highest price is Tk.120.00 in the month of February. The lowest price is Tk. 70.00 in the month of July. The price variation is 57.14%. The highest price is Tk. 160.00 over the months from April to June, whereas the lowest price is Tk. 120.00 in the month of December and February. The price variation is 33.33%.

Mirpur Bazar

Mirpur bazar is one of the important retail market in the western sector of Dhaka Metropolitan City.



Bar Chart 3 portrays that the Hilsha retail price is the highest at Tk. 280.00 in the month of April and it is the lowest in the month of October at Tk. 120.00. The price variation is 88.68%. In the case of Pomfret the highest price is Tk. 265.00 in the month of December whereas the lowest price is Tk. 150.00 in the month of April. The price variation is 76.66%. The highest price in case of Telapia is Tk. 80.00 in the month of February and March. The lowest price is Tk. 60.00 in the month of July and August. The price variation is 33.33%. In context of Shrimp, the highest price has been found to be Tk. 150.00 in the month of December. The lowest price is Tk. 120.00 in the month of October, November, February, May and June.

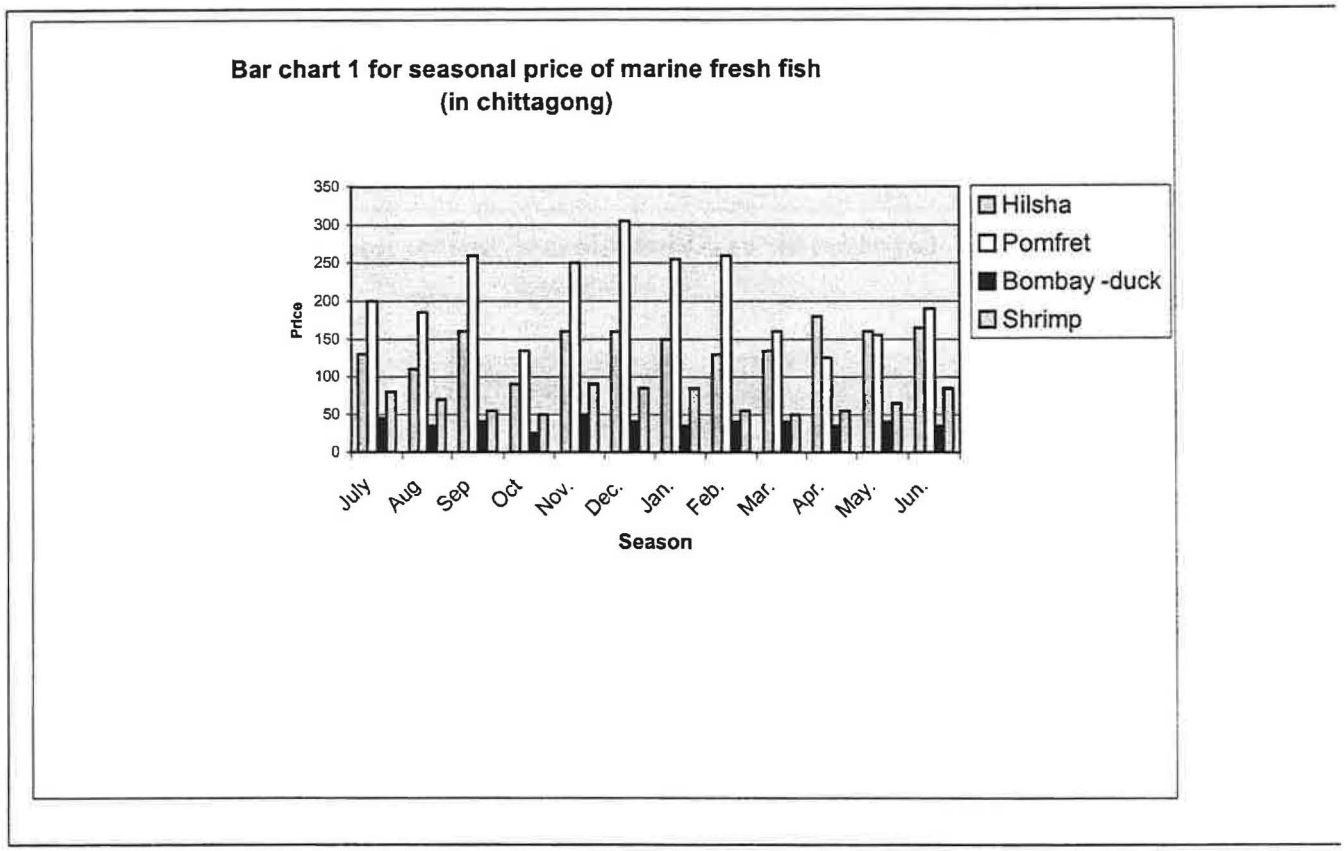
4.2.2.2 Chittagong Retail Market

In Chittagong Metropolitan City, the data have been collected from three well-known markets. These are Reazuddin Bazar, Kazir Dewri Bazar and Mogaltuly Bazar during the period from July 2001 to June, 2002. These markets have been selected considering the factors covering volume of transaction, wealth status and specific buying behavior patterns of the customers.

Reazuddin Bazar

This is one of the leading business centers in the metropolitan city of Chittagong and it is the oldest and biggest retail fish market in the same. Data collected form this market. Bar chart 4 shows the data thus collected.

Seasonal Prices for Fresh Fishes.
Place : Chittagong, Reazuddin Bazar (Retailer to Consumer)
Taka per kg.



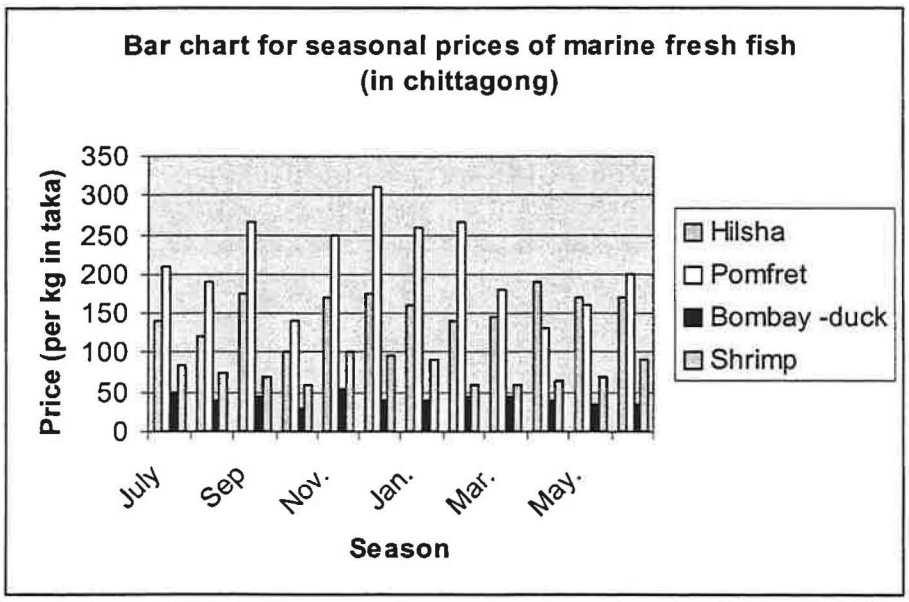
NB: ***Prices would be collected during the third week of the month. Prices are average price per kilogram for average size and average quality fish***

Bar chart 4 shows that prices of Hilsha are lowest in the month of October and highest in the month of April. The price variations range from Tk. 90.00 in the month of October to Tk. 180.00 in the month of April and the variation rate is 100 percent. Among the various causes of these variations, the most important is the seasonality of fish harvesting. In the case of pomfret species, the highest price is Tk. 305.00 in December and lowest in the month of April (Tk. 125.00). Again in case of Bombay duck, the prices have been found to be Tk. 40.00 in the month of September, December, February and May. Again, the prices have been found to be Tk. 35.00 in the months of August, January, April and June. It ranges from Tk. 25.00 to Tk. 50.00. It is one of the popular dishes to the consumers of Chittagong market. The price of shrimp remains constant in the months of September, February and April and it is Tk. 55.00 per kg. on the average. Again, the same price has been found to prevail in the month of December, January and June and the price is Tk. 85.00. The price variation is 80 percent. The highest price is found in the month of December which is Tk. 90.00, whereas the price is found to be the lowest in the month or March and the price

is Tk. 50.00. thus, it is seen that the seasonal price variations are 100%, 108%, 100% and 80% in the cases of Hilsha, Pomfret, Bombay duck and shrimp respectively.

Kazir Dewri Bazar

This market is located in the sophisticated areas of the city and it is well- connected with different aristocratic areas of the city through various modes of transportation. Further, the parking facilities, open space and cleanliness of the market premises attract the wealthy group, car owning consumers from different parts of the city.



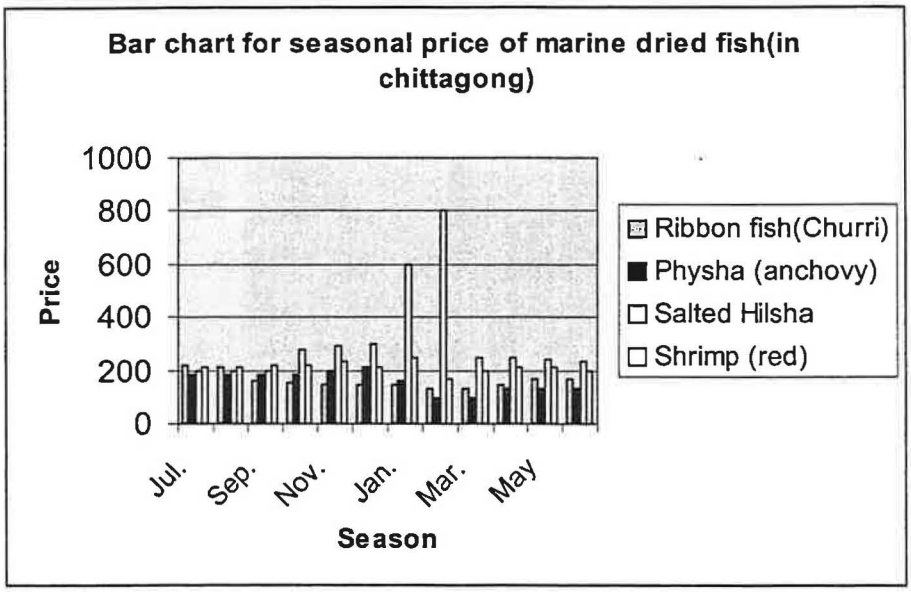
NB: ***Prices would be collected during the third week of the month. Prices are average price per kilogram for average size and average quality fish***

Bar chart 5 portrays that the highest price of Hilsha is in the month of April and the price is Tk. 190.00, whereas it is the lowest in the month of October at Tk. 100.00. It, further, evidences that the price variation is 75%. The highest price of pomfret fish occurs in the month of December at Tk. 310.00. It is the lowest in the month of April at Tk. 130.00. It further shows that the price variation is 138.46%. The price of Bombay duck is uniform in the months of August, December, January, and February, with a price of Tk. 40.00, whereas, it is constant in the months of September, February and March with Tk. 45.00. The price variation is 83.33%. The price of shrimp is the highest in the month November and the price is Tk. 100.00, and the lowest price is Tk. 60.00 in the month of October, February and March. The price variation is found to be 66.66%.

Mogultooly Bazar

This market is situated near Agrabad commercial area. It is under the Double Mooring Police Station in the ward no. 29. The economy as well as professional

people are the customers of this market who are price sensitive and bargaining in nature. It has been observed that some consumers compromise quality of fishes with lower prices to be changed for the same.

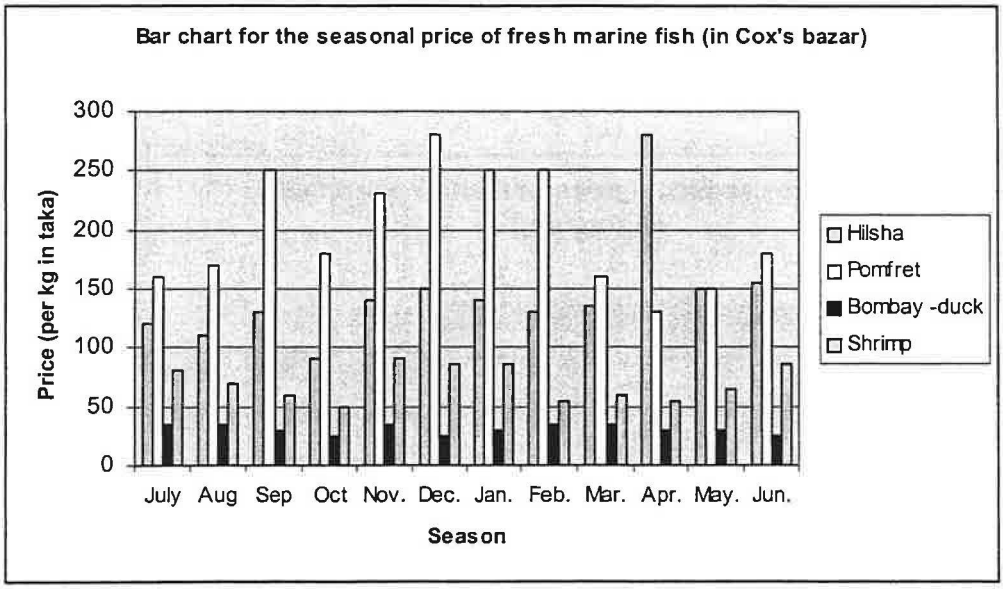


NB: ***Prices would be collected during the third week of the month. Prices are average price per kilogram for average size and average quality fish***

Bar chart 6 reveals that the lowest price of Hilsha is found to occur in the month of October, at Tk. 85.00 whereas it is the highest in the month of April at Tk. 85.00. The price variation is 94%. The price of Pomfret fish is the highest in the month of December at Tk. 300.00 and it is the lowest in the month of April at Tk. 120.00 The price variation is 115%. The prices of Bombay duck are constant throughout the month of January to June at Tk. 30.00. The highest price is Tk. 40.00 and the lowest price is Tk.25.00 and the variation is 60%. In the case of Shrimp, the highest price is in the month of November at Tk.90.00 and the lowest price is Tk. 50.00which is the constant throughout the months from March to April. The price variation is 80%.

4.2.2.3 Cox's Bazar Retail Market

In Bangladesh, the contribution of Cox's Bazar in context of renewable natural resources like fishes cannot be over-exerrated. This retail market was covered as one of the study areas in retail marketing of consumer goods (Habib Ullah et al. 1965). Bridging the data gap over the years and making its findings more specific regarding one of the retail market segment like fisheries, the present study covers Cox's Bazar region as one of the study areas.



Bar chart 7 depicts that the price of the Hilsha fish is the highest in the month of April at Tk.280.00 and it is the lowest in the month of October at Tk. 130.00, the variation being 115.38%. The price of Bombay duck is constant throughout the month of July, August, November, February and March with the price of Tk. 35.00, whereas it is Tk. 30.00 in the month of September, January, April and May. The lowest price is Tk. 25.00 in the month of October, December and June and the highest price is Tk. 35.00 in the mentioned months, the price variation being 40%. The price of shrimp is the highest in the month of November with Tk. 90.00 and the consistency of the price in the month of December, January and June with Tk. 85. The price variation is 63.63%.

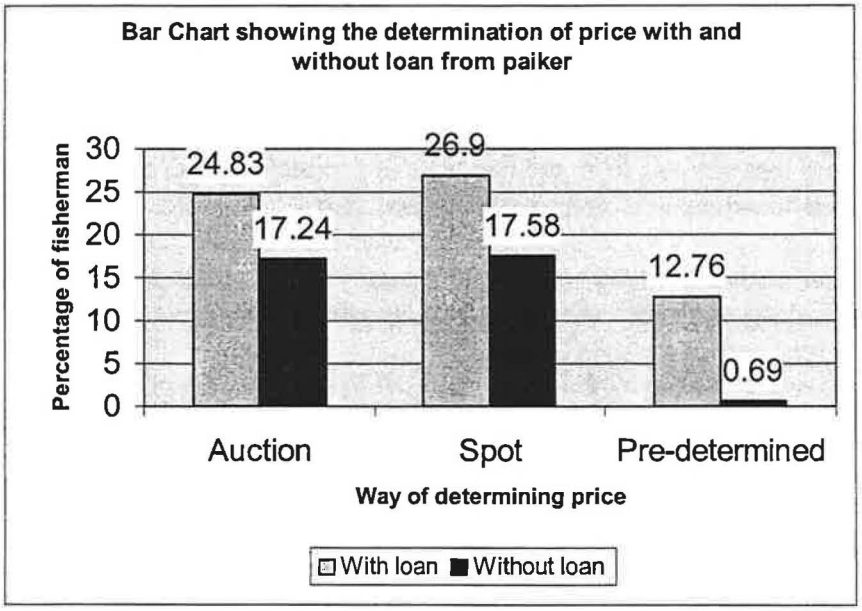
4.3 Determining Price

Price is a sensitive issue and it affects the buying and selling process of fish marketing. We were interested to know from our trader sample respondents whether the price varies if purchased from fishermen and moneylenders.

Table 26 Ways of determining price according to the loan taken

Ways of Determining price	Loan category		Total
	With loan from paiker	Without loan from paiker	
Auction	72 (24.83%)	50 (17.24%)	122 (42.07%)
Spot	78 (26.90%)	51 (17.58%)	129 (44.48%)
Pre-determined	37 (12.76%)	02 (0.69%)	39 (13.45%)
Total	187 (64.49%)	103 (35.51%)	290 (100%)

- Remaining 10 did not respond in this question
- Figures in the parenthesis indicate the corresponding percentage of respondent fisherman



For testing the fact whether the determination of price of fish is independent of loan status from paiker, we consider

H_0 : The determination of price of fish is independent of loan status from paiker.

against

H_1 : The determination of price of fish is not independent of loan status from paiker.

The computed value of χ^2 is obtained as **5.88,** while $\chi^2_{3;\,0.05}$ = **11.418**, which implies that **the null hypothesis** may be **rejected**, i.e., the determination of price of fish is not independent of loan status from paiker.

Chapter # 5 Strategies to Improve Present Marketing System

5.1 Marketing Problems in the Present System

Efficient marketing is essential for the growth and development of agriculture and industry. Marketing may be described as the chain of processes backed by creative thinking that spreads from the concepts of product through strengthening the want for the produce to when it is consumed or used (Latif 1976). In the absence of the same and existence of problems in coastal fish marketing both the fishermen and consumers suffer a lot. In such a context, our enquiry as to the problems of marketing from the coastal areas and the responses of the samples have been incorporated in the table 27.

Table 27 Problems of Fish Marketing from Coastal Areas

Problems	Frequency of Responses in percentages
Lack of easy access to credit	100%
Absence of adequate marketing information	90%
Lack of security at sea for fishermen	77%
Lack of modern communication facilities	73%
Lack of adequate fishing equipment	68%
Absence of adequate transportation system	65%
Exploitation through dadandari system	90%
Absence of logistic support for efficient distribution & lack of adequate storage facilities	62%
Pollution of seawater hindering sea fish breeding	70%
Lack of standard weighing system	60%
Absence of well constructed landing site	60%
Absence of government help and guidance	73%
Quickly perishable nature of fishes	71%
Presence of limited number of NGOs in study areas	100%
Manipulation of the middlemen at the different stages of the distribution chain	60%

[N. B. Percentages exceed 100 as respondents mentioned more than one problems]

Table 27 portrays that the most important problems are lack of easy access to credit and presence of limited number of NGOs in study areas. Absence of adequate marketing information and exploitation through the Dadandari system are the second important problems that adversely affect the coastal fish marketing. It has been further observed that the third problem affecting the coastal fish marketing is the lack of security at sea. In the fourth instance, lack of modern communication facilities like mobile phone and Government help and guidance have been identified to be the problems with which fish marketing system from coastal areas are confronted. While quickly perishable nature of the fishes ranks as the fifth problems, lack of adequate fishing equipment has been recognized as the sixth problem. In this connection, pollution of sea water is one of the most important problems in the growth and development of fish breeding, as a result fish catches are declining day by day. Absence of quick, efficient and cheap transport system adversely affect fish marketing efficiency due to its perishable nature. Absence of logistic

support and lack of adequate storage facilities hinders the speed and smooth flow of fishes in different market. Lack of standard weightage system, absence of well constructed landing site and manipulation of middlemen have also been reported to have retarded the effective operation of the coastal fish marketing system in coastal areas of Bangladesh.

5.2 Strategies to Improve the Present System

Fish is a potential renewable natural resource of Bangladesh. The study pinpointed a number of marketing problems as stated above. The solution of these problems is warranted for the benefit of fishermen, people involved in marketing chain and the economy of the country as a whole. In such a context, suggestions of stakeholders and observation of researchers have been incorporated in Table 28.

Table 28 Showing the Probable Suggestions to Overcome Problems of Fish Marketing

Suggestions	Frequency (in percentages)
Easy access to market	100%
Security at deep sea for fishermen	90%
Easy access to loan	100%
Development of communication and transport facilities	70%
Availability of logistic support	85%
Improvement of law and order situation in the coastal areas	85%
Adopting legal measures & creating social awareness to control sea water pollution	90%
Ensuring regular flow of marketing information	70%
Co-ordination among the program of the government bodies for ecological balance	80%
Constriction of good landing site	80%
Offering opportunities for development of backward linkage industries	70%

[N.B. Percentage exceeds hundred because respondents mentioned more than one suggestions.]

Table 28 demonstrates that easy access to market and easy access to loan are the main prerequisite for efficient distribution of marine fishes in the study areas. The table further states that offering security at deep sea, adopting legal measures, and creating social awareness to control sea water pollution may go a long way to solve the problems of fish marketing from the coastal areas of Bangladesh. In addition, the table shows that the provisions of logistic support and improvement of law and order situation in the coastal areas can also play an important role in the improved operation of the coastal fish marketing system. Coordination among the different bodies of the Government mechanism as well as construction of good landing site are among the important factors which may ensure smooth and comfortable flow of fishes from the landing centers to the

demand areas as well as distribution centers of the country. The table finally concludes by referring to ensuring regular flow of marketing information and offering opportunities for development of backward linkage industries as the last suggestions (though not the least) for facing the multidimensional problems of the fish marketing system from the coastal areas of Bangladesh.

5.3 Direction for Potential and Further Research

The marine fish marketing system examined in the study can be explored further. The study does not cover all of the important variables affecting marketing system in study areas. The use of a stratified sample can always be questioned for its generalizability. However, it is a vast sector in the economy of Bangladesh. thus, further research may be conducted on the following fields of research:

(i) The present research covers only three markets and six coastal villages of Bangladesh. Further, research may be conducted covering other markets as well as fishermen villages of the country.

(ii) The study covered only fresh fish marketing. But, dry fish marketing may play a significant role in the economy of Bangladesh. Further, poor men and women may be involved in the various stages in the process of fish drying and marketing. Thus, it may create job opportunities for the poor fishermen and the process may play significant role in the poverty alleviation of coastal fishermen.

(iii) A study on the 'export marketing of dry and fresh fishes' may be conducted which was not examined in the present research. The success of export marketing depends upon a number of service activities like packaging, grading and quality control. These support services will open up new opportunities for small business development based on fishery resources, different types of industries in context of forward and backward linkages may be established in this sector of economy.

Bibliograghy

1. Ahmed, N.: "Marketing of Selected Fishes in Bangladesh: A study in Efficiency", an unpublished Ph.D. thesis; Department of Marketing, University of Dhaka,1983.
2. Amarchand, D. & Varadharazon, B., An Introduction to Marketing, New Delhi : Vikas Publishing House Private Ltd., (1979).
3. Ali, M. L., Matshyasampad Unnayon O Babosthapona Koushal (Fisheries Development and Management Strategy). Sankalan: Matsya Sampad Unnayan, Fish Week 98. Directorate of Fisheries and Ministry of Fisheries and Livestock, 'Government of the People's Republic of Bangladesh, Dhaka (in Bengali), 1998.
4. Amin, N. M. Matshyasampad Babosthaponai Prathisthanik Samonnoyer Guruttya (Importance of Institutional Co-ordination in Managing Fisheries Resources, Sankalan: Matsys Sampad Unnayan, Fish Week 98. Directorate of Fisheries and Ministry of Fisheries and Livestock, Government of the people's Republic of Bangladesh, Dhaka (in Bengali) 1998.
5. Ahmed, Nesar,: "A study on Socio-Economic Aspects of Coastal Fishermen in Bangladesh, Mymensingh", Bangladesh, undated .
6. Alam, K, Two Fishing Villages of Bangladesh: A Community Study,1996.
7. Blowfield, M. E. and Haque N. Ties Between Marketing and Credit in Coastal Bangladesh – Safety Net or Debt Trap, PHF News, Issue No. 6, Chennai, India, 1996.
8. Associated Services "Marine Fisheries Sector Study: Socio-Economic Determinants of Resource Allocation", An unpublished appraisal report of a project commissioned by Danida, Dhaka,1997.
9. Banik, R. C. K., Humayun, N. M., Matsya Sakranto Parishankhan (Fish RelatedStatistics). Sankalan: Matsya Sampad Unnayan, Fish Week 98. Directorate of
10. BOBP, "Towards Sustainability: Needs and Concerns of Aquatic Resources and Fisheries in the Bay of Bengal Region and Project Ideas to Facilitate Their Sustainable Management", Madras, India,1996.
11. BOBP,National Wlorkshop on Fisheries Resources Development and Management in Bangladesh , Organised in Dhaka, Banglsdesh, 1997.
12. BOBP, "Hilsa Investigations in Bkanglsdesh" , Sri Lanka, 1987.
    Fisheries and Ministry of Fisheries and Livestock, Government of the People's Republic of Bangladesh, Dhaka (in Bengali), 1998.
13. CODEC: Comprehensive Study on Fish Vendors in Chittagong City, Phase II ; Community Development Center , Chittagong, Undated.
14. Coulter J.P. & Disney J.G., The Handling ,Processing, and Marketing of Fish in Bangladesh, ODNRI Bulletin No.1, (1987).
15. Dastidar R., Literature Review on Fish Distribution from Coastal Communities-Market and Credit Access Issues; Paper prepared for workshop on "Poverty Alleviation and Livelihood Security among the Coastal Fishing Communities-Market and Credit Access Issues",2001.

16. Frederick, John H ., Public Warehousing, New York : The Ronald Press Company Quoted in M A Mannan, Principles of Marketing, Dhaka, Royal Library, (1940) .
17. FAO, "A Participatory Approach to Development: Fisher Women's Activities in Bangladesh"; Food and Agricultural Organization of The United Nations, Italy, 1986.
18. Francis, Geodffery K. (1980), Modern Management, New Delhi, Sultan Chand Company Ltd. (1940) .
19. Habibullah, M. , et al , Retailing of Consumer Goods in East Pakistan, Bureau of Economic Research, DU, Dhaka, Bangladesh(1965).
20. Hasan & Carleton, Grick Fish Marketing and Its Impact on the Future Operations of the Grameen Motsho Foundation at Joysagar and Dinajpur Fish Firms, (Mimeograph), (1999).
21. Huq, Mahfuzul and Huq Ataul, "Fishermen in Natural Depression of Bangladesh: Socio-Economic Conditions and Standards of Living, in Panayoton, (ed.) Small – Scale Fisheries in Asia, Srilanka, Pp. 84-93, 1998.
22. Holland, Alex & King, Dunkan: "Development Support to Coastal Fishing Communities: Situation Analysis", undated.
24. Jha Bishwaamobher "Export Marketing Strategy for Carpet Industry in India", Indian Journal of Marketing, Vol. XVI, No. (1985).
25. Kotler, Philip principles of Marketing, New Delhi: Prentice Hall of India (PVT) Ltd, (1988).
26. Kotler, Philip & Armstrong, Gary Principles of Marketing, New Delhi: Prentice Hall of India PVT. Ltd. (1995).
27. Kleih, Ulrich "Fish Distribution from Coastal Communities: Market and Credit Access Issues" Paper presented in workshop at CARITUS auditorium Chittagong, 27-28 March 2001.
28. Koontz, Harold et al Management, London McGraw –Hill International Book Company, 1980.
29. Kotler, Philip and Armstrong, Gary, Principles of Marketing, New Delhi: Prentice Hall of India PVT Ltd. 1995.
30. Kinnear, Thomas & Bernhardt, L. Kerreth, Principles of Marketing, N. J. Scott, Foreman Co., Pp- 120 1983.
31. Mian, Ali Mohammad and Myan, Alimullah M., An Introduction to Statistics, Dhaka: Ideal Library, 1994.
32. Latif, TAA, The Practice of Marketing, New Delhi: S. Chand and Company Ltd. (1976).
33. M Muzaffar Hussain & Md. Helal Uddin , Quality Control and Marketing of Fish and Fish Products: Needs for Infrastructure and Legal Support (1995).
34. Rahman, Khandokar, M. Development of Agricultural Marketing in Bangladesh, Comilla : Bangladesh Academy for Rural Development, (1973).
35. Rahman, Md. Masudur, & Chowdhury Wahidun Nabi , Fisheries Management in the Context of the National Fisheries Policy in Bangladesh, Paper presented to the workshop on " Fisheries Socio –economics and Management Policy Planning", November 24-December 01, 1998.
36. SCL Newsletter, Sustainable Coastal Livelihoods Newsletter, Volume1, Issue 1;IMM Ltd., University of Exerer, UK, 2000.

37. Shaheen, Sirajuddaula & Solaiman, Md., Marketing of Tomatoes in Chittagong: A Case Study of Some Selected Thanas, Chittagong University Studies, Vol. 9, (1993).
38. Stanton, William J Fundamentals of Marketing, London: Mc-Graw Hill, Inc. (1987).
39. Ahmed, N. 1983: "Marketing of Selected Fishes in Bangladesh: A study in Efficiency", an unpublished Ph.D. thesis; Department of Marketing, University of Dhaka.
40. Amarchand, D. & Varadharazon, B. (1979), An Introduction to Marketing, New Delhi : Vikas Publishing House Private Ltd., p-7
41. Frederick, John H . (1940) , Public Warehousing, New York : The Ronald Press Company Quoted in M A Mannan, Principles of Marketing, Dhaka, Royal Library, p-118.
42. Francis, Geodffery K. (1980), Modern Management, New Delhi, Sultan Chand Company Ltd. p-42
43. Habibullah, M. , et al , (1965), Retailing of Consumer Goods in East Pakistan, Bureau of Economic Research, DU, Dhaka, Bangladesh.
44. Hasan & Carleton, Grick (1999), Fish Marketing and Its Impact on the Future Operations of the Grameen Motsho Foundation at Joysagar and Dinajpur Fish Firms, (Mimeograph), p- 7-8
45. Jha Bishwaamobher (1985), "Export Marketing Strategy for Carpet Industry in India", Indian Journal of Marketing, Vol. XVI, No. 1, p. 7.
46. Kotler, Philip (1988), principles of Marketing, New Delhi: Prentice Hall of India (PVT), Ltd. p. 43.
47. Kotler, Philip & Armstrong, Gary (1995), Principles of Marketing, New Delhi: Prentice Hall of India PVT. Ltd. Pp. 419-420.
48. Latif, TAA, (1976), The Practice of Marketing, New Delhi : S. Chand and Company Ltd. p – 6
49. Rahman, Khandokar, M. (1973), Development of Agricultural Marketing in Bangladesh, Comilla : Bangladesh Academy for Rural Development, pp 64-65
50. Shaheen, Sirajuddaula & Solaiman, Md., (1993), Marketing of Tomatoes in Chittagong: A Case Study of Some Selected Thanas, Chittagong University Studies, Vol. 9, p - 65
51. Stanton, William J. (1987), Fundamentals of Marketing, London: Mc-Graw Hill, Inc., p. 318.

Consultation Workshops on "Fish Distribution from Coastal Communities – Market and Credit Access Issues"
Chittagong, 22- 23 July 2002, and Dhaka, 25 July 2002.

INSTITUTIONAL AND SOCIO-POLITICAL CONTEXT OF COASTAL FISHING COMMUNITIES IN BANGLADESH

Iftekhar Uddin Chowdhury PhD, Professor and Chair, Department of Sociology, University of Chittagong

Introduction:

In a pre-dominantly rural economy of Bangladesh, fishing plays an important role in the social relations of production and for providing employment. Lying in the delta of three great rivers - the Ganges, the Brahmaputra, and the Meghna, and covering 36,000 sq. km, the coastal area of Bangladesh comprise the world's largest deltaic zone. About 8% of the total population in this country depends on fisheries for their livelihoods. Since 1984 the growth of the number of households, the number of fishermen, the number of gears etc. in the fishing villages was about ten times higher as the average population growth in Bangladesh. The main components of fishery production are Inland Capture Fisheries, Culture and Marine Fisheries. The fact is that about 94% of the marine catches are from the artisanal fishery which consists of both mechanized and non-mechanized boats using gillnets, seine nets and set bag nets. As such majority of the fishermen in coastal areas in Bangladesh are engaged as fisheries laborers by the Bahaddar or boat owners.

The scenario of fishing communities in Bangladesh is very much contiguous to the portraits of outstretched deprivation in regard to rural poor in the country. Fisheries in the coastal areas has become a perpetual struggle against poverty. It delineates no more the effectiveness of comments by the French traveler Bernier that "Bengale produces rice in such abundance..... Fish of every species, whether fresh or salt, is of the same profusion. In a word, Bengale abounds with every necessary of life". The general opinion is that fishing in the coastal area of Bangladesh is controlled and indirectly owned by the Dadondar(money lender) and the Bahaddar(boat owner). This money-lending operations within the fishing community set in motion the broader outflow of resources from the community to middlemen and capitalists. Through extracting the catches at abnormally low prices due to Dadon or money lending agreement, these operations have generated a permanent chain of indebtedness among the fishermen in the coastal areas. The reality is that the unfavorable procurement, distribution and marketing mechanism of catches has been jeopardizing the livelihood of traditional fisherfolk in coastal Bangladesh. Against this backdrop, this study aims at exploring the institutional, and socio-politico issues in relation to coastal fishing communities for a general conceptualization and understanding about the overall situation from a view point of Sustainable Livelihood Approach. This

presentation is based on partial use of the data collected for the research project funded by SUFER,DFID, Dhaka.

Rationale of the Study:

In order to address the problems and prospects relevant to poverty alleviation and improve the quality of life of the poverty driven and also culturally and economically marginalized fishing communities in coastal area of Bangladesh, the dynamics of Sustainable Livelihoods Approach should be properly understood by the target population, stakeholders and the government. Sustainable Livelihoods (SL) is neither a panacea for poverty eradication nor a project oriented perspective, rather it is a framework for thinking about and an approach for addressing poverty. To explore the situation in terms of SWOT (Strength, Weakness, Opportunities and Threats) analysis, SL on one hand; emphasizes the evaluation of resources that help people survive and thrive i.e., Capital Assets such as: natural, social, human, physical and financial capital. On the other hand, SL does focus the issues to Vulnerability or the external factors that influence the levels of assets and cause poverty as a result of negative Trends in relation to the quantity and quality of natural resources (e.g. fish resources decline, loss in biodiversity, rapid growth of population and urbanization, pollution of water resources etc), Shocks such as: war /communal riots, natural disasters, epidemics, sudden economic change etc. and Seasonality.

One of the key principles of SL approach is the attempt to link micro and macro levels i.e., household/community level with the policies, institutions and processes as initiated by the government, the private sector and the NGOs. The existence or lack of policies as well as the changes or transformation in the policies and institutions have greater effects on the livelihoods of the fishing communities and play a vital role to mitigate the negative impacts of trends, shocks and seasonality leading to reducing vulnerability of the fishing communities. The strategy is that target population should come up with the strength within the policy and institutional constraints utilizing their assets to make a quality living and reducing vulnerability. In the case of fisherfolk, access to consumption credit must be ensured with exploitation free policies and institutions to make sure that fishermen can survive throughout the year and be able to go fishing properly during the season.

On the basis of above framework of SL approach, this study has attempted to design its survey and to collect data relevant to information on various capital assets and vulnerability and focus on the institutional issues. The qualitative evidence indicates that the incident of indebtedness is very high in fishing communities of coastal Bangladesh. If the majority of the fishermen had access to alternative sources of consumption credit, it is unlikely that Dadondars or the moneylenders were able to significantly alter the distribution and marketing decisions of the fishermen. Moreover, the fact is that traditionally it is the 'Jaladas", a sub-caste or the members of a single endogamous group of Hindu caste system with strong kindred of recognition of kinship and affinity who have been engaged in this profession of fishing from ancient times. As a result, this

artisanal fisherfolk have some rigid religious and psychological barriers to go for any change for habitat and profession. Contrary the over burden of population, landlessness and for other socio-economic reasons, Muslim rural people are changing their profession to fisheries specially in the coastal area of Bangladesh. The situation of change and transformation in profession, technology, distribution and marketing have a lot of negative impacts on the livelihoods of traditional fisherfolk which needs investigation and research in a befitting manner.

Objectives:

The purpose of the research is to identify the factors in relation to institutional and socio-political context from both micro and macro perspectives through primary qualitative and quantitative data. The major objectives may be mentioned as follows:

- to examine the prevailing conception and understanding about the fisherfolk poverty;
- to explore the socio-economics of the fisherfolk;
- to examine the changes in terms of occupation, mobility, migration etc.
- to identify the institutional problems and constraints;
- to determine the role of social organizations;
- to identify the factors in relation to power structure and decision making.

The Methodology:

A meaningful social enquiry normally proceeds in three stages of research process – reflexive, developmental and experimental. The reflexive processes in this study have focused the review of the relevant literature to unearth some fundamental assumptions or paradigms. The development process was involved with the problem of investigation which the study identifies in the indebtedness of fishing communities. The experimental process i.e., set up a research situation bearing on the problem was based on a household survey in this study.

Survey design:

The survey was designed on the basis of the objectives of the study. The design was concerned with the fundamental issues as follows:

- types and nature of the information needed to fulfill the objectives;

- methods of data collection to ensure the mechanism to obtain relevant information properly;
- selection of study locations;
- preparatory phase for the hardcore data collection viz. preparing questionnaire, pre-testing of questionnaire and finalization of questionnaire with necessary modification;
- framing sampling and sample size;
- techniques of interviewing;
- training for the interviewers;
- observation and case studies;
- editing collected data;
- computation and tabulation;
- analysis of data;
- report writing.

Questionnaire:

The nature of the questionnaire was problem demanded. To facilitate the flexibility in the data collection, the questionnaire was divided into two major sub-divisions – the household information and other information in relation politico and institutional issues. Three ethnographic qualitative techniques were used for collecting data. They were: a) Structured questionnaire; b) Face to face interview with stakeholders; and c) Case studies . Structured and sometimes open ended questionnaire were used while interviewing the head of the household of the fishing communities. Questionnaire was designed in such a fashion that it touches most issues relevant to the objective of the study.

The questionnaire was pre-tested and modified as per necessary requirement. Seven active, educated, energetic and enthusiastic field supervisors/workers/enumerators were selected for collection of data. They were properly trained to deal with the interview process, rapport building with target population, and interview in a befitting manner. The training was conducted by resource persons having skills and knowledge on both theories and research methodologies.

Sampling:

Since the study was designed to collect information in six localities of fishing communities where CODEC has been offering services, it had to cover the areas and also the size of the sample described below. On the basis of localities and stakeholders, random as well as stratified sample has been identified.

Geographical Areas/Thana	District	Sample	Percent
Cox's Bazar Sadar	Cox' Bazar	51	16.5
Sitakund	Chittagong	53	17.1
Dhumki	Potuakkali	54	17.4
Kola Para	Potuakhali	48	15.5
Morel Gong	Bagerhat	56	18.1
Ashasuni	Satkhira	48	15.5
		Total: 310	100

The names of the villages and sample size under the areas were Hatkhola Para – 17, Zana Para – 15, Mamum Para - 19, Latifpur – 15, Noa Para - 19, Salimpur - 19, Lebukhali - 52, Panju Para - 35, Alki - 15, North Debraj - 42, South Debraj - 14 and Kulla - 48.

Case Studies/PRA/FGD:

Apart from the above sample survey, there were 16 case studies on the fishing communities based on Individual Interview, Participatory Rural Appraisal (PRA) and Focus Group Discussion (FGD) approaches .

Limitation and Barriers:

The important limitation was to catch hold of head of the households as he was seldom available during season. Therefore, for the planning the time frame and the schedule for the interview, the team had to be dependent on the availability of the respondents. The second was language barrier in terms of the localities and local colloquial and dialects. The other important barrier was to make the respondents understand about the objective of the survey that it was not for giving them any loan or other financial benefits rather it was purely on academic and research interest to get a overall picture about their livelihoods. The rapport building and make them confident that the data will not be disclosed or cause any suffering because of the information they are giving was also an important issue concerned with limitations and barriers.

Survey Findings:

Age of the Respondent (Table 1):

Approximately, one-third respondents i.e., 34% of the head of the households are below 40 years of age. They belong to 30-39 years age group. It indicates that largest number of head of households under survey belong to such age group which is not generally considered to be the average age of a mature household head. It may be reason that most families in the fisherfolk get their young children married and make a separate household. The next larger segment 22% belong to 40-49 years age group. About 15%, 14%, 8% and 6% respondents belong to 20-29, 50-59,60-69, and 70+ years age group. It is interesting to note that a total of 28% represents the age group of years from 50 and above most of whom do not go fishing and earn for the family because of old age or illness but are treated as the head of households. It is a traditional nature that seniors are respected and properly taken care of by even the young earning members in both caste bond Hindu as well as Muslim communities.

Size of household (Table 2):

Table 2 shows that the average household size of the fisher folk community is 5.6, which is little larger than the national average 5.26 (HES 1995-96). The largest and lowest sizes of the household were found in Cox's Bazar under Cox's Bazar and Ashasuni under Satkhira district which were 6.6 and 4.8 respectively. The household size in fishing communities in Cox's Bazar is very much familiar to the national household average for Cox's Bazar District which is 6.6. The household size in Ashasuni is lower than the size of national average for Satkhira 5.6.The second largest size 6 was in Sitakund under Chitagong district which is also very familiar to the national average for Chittagong 5.9. The sizes of households fishing communities in Dumkhi and Kola Para under Patuakhali district were found 5.85 and 5.36 which is closer to the national average for Patuakhali 5.7. The size of household in Morel Gonj in Bagerhat district was found 4.9 which is lower than the national average for Bagerhat 5.3. Again the size of male members are larger in Cox's Bazar, Sitakunda, Kola Para and Morel Gonj where the size of female members are larger in Dhumki, and Ashasuni. The reasons for large household may be that the fishermen are illiterate and are not aware to adopt methods for fertility control and reduce family size. Moreover, due to their idle time throughout the year except the seasons for fishing make them remain at home and go for sex with spouse which is the only pleasure for them.

Education of the Respondent (Table 3):

In terms of status of education in fishing communities, it was found that 65% head of household have no education at all. Only 18% have completed primary and 11% have completed high school education. 3% and 2% of the respondents completed Secondary School Certificate (SSC) and college education respectively. 1% responded that they have completed informal school education. This education scenario reflects the negative attitude of the fishermen towards education on one hand and on the other, no effective initiatives were taken by government, private sectors or NGOs to educate the fishermen. This illiteracy in fact has been big hindrance for the fishermen to develop their communities and become rigid to look for alternatives or change of profession. They failed to address problems due to lack of education and could not make ways for their protection from Dadandars or other exploiting groups and institutions. They are still not in a position to understand properly what to do and how to face the trends, shocks and seasonality due to lack of knowledge.

Occupation of the Respondent (Table 4):

The major occupation found among the respondents in the fishing communities are Bahaddar(boat owner) 16%, Crew member 16%, Fishing and Agriculture 13%, Fish Processor 9%, Bepari 7%, Paiker 7%, Agriculture 5%,and Mahjee (captain) 4%. There are other minor occupation with low percentage among the respondents such as Second Mahgee(Goloiga), Self-employed, Daily Worker, Mahajan and Dadandar. The percentage of Bahadder was found 3% in Cox's Bazar, 3% in Sitakunda, 6% in Dhumki, 3% in Kola Para, 1% in Ashasuni. The Bahaddar from Cox's Bazar, Sitakunda and Kolapara are mainly the owners of engine boat and Bahaddar from dumkhi and Ashasuni are owners of non mechanized boat. 3% crew member was counted for Cox's Bazar. It is 6% for Sitakunda and 2% for Kola Para and 3% for Assasuni. Among the respondents from Cox's Bazar, the percentage of Paiker was found larger. Next larger group is crew members and then Bahaddar and Bepari. In Sitakunda, the percentage of crew members was found larger. Next fish processor and then Bahaddar. In Dumkhi, the fishing and agriculture was second largest group. In Morel Gonj, the fishing and agriculture group was found larger. The data indicates that there are more crew members where there are more engine boats. In Asassuni, the crew members are larger not because that there are more engine boats. It is because that the small non mechanized boats are used not by the owners but by the crew members on rent very often.

Income of the Respondent (Table 5):

Table 5 shows that the largest number of respondents belong to yearly Taka21000-30000 income group from fishing sources. The second largest is for yearly income group of Taka31,000-40,000 and then 8% and 5% Taka41,000-50,000 and for Taka 11000-20000 per annum. There are 3% for Taka51000-60000 and 3% for more than Taka80,000 income group. The group with largest income i.e., more than Taka80000 was found more in Cox's Bazar and Morel Gonj. In Cox's Bazar, it is because of

large number owners of engine boat and in Morel Gonj, it is because that most fisherfolk are involved with shrimp culture which is more income and profit oriented. Lowest income group was found larger in Sitakunda due to large number of crew member who earn only in season and become mostly unemployed throughout the year. A total of about 86% of the respondents have yearly of Taka11000-60000 viz. an average of Taka3500 per month by which it is impossible for a family to make a simple living. It indicates that this fisherfolk are really poor and dependent on the money lenders all the time not only for buying fishing materials but also food for survival. The income from other sources data shows that 61% respondents have no income from other sources. Among the respondents for income from other sources, the majority (17%) replied for Taka6000-10000, 9% for Taka21000-30000 and 8% for Taka11000-20000. The other sources of income are mainly from agriculture and daily labor.

Access to Land of the Respondent (Table-6):

58% respondents have been found with access to land and 42% with no land at all. This land owning is the homestead land in most of the cases. Among land owners, 51% have their own land, and 4% rented. Major land owners i.e., 49% have land for more than 9 decimals and 6% have 4-5 decimals. Again, among land owners, the majority i.e., 14% are from Morel Gonj and 13% from Kola Para. The access to land are 10%, 9% and 7% and 6% from Cox's Bazar, Asasuni, Dhumki and Sitakunda respectively.

Ornaments and Livestock:

About 65% respondents replied that they do not own any kind of ornaments. Among 35% owners of ornaments, 20% household own 1-10gm and 11% own 11-20 gm which is in fact very less compared with other middle or lower middle class families in the country. About livestock, 5% have a cow, 14% have 2 cows, 4% have 3-4 cows and 67% have no cow at all. About 10% respondents 1-3 goat, 14% have 1-5 chicken/duck, 14% have 10 chicken/duck, and 51% have no chicken/duck at all.

Status of Home of the Respondent (Table-7):

Among the respondents, 75% replied that they have Kuttcha (Bamboo + Straw) houses. 21% respondents have Kuttacha (Bamboo and C.I. Sheet) houses, 4% have semi Pacca building. 49% homes are with 1-2 and 44% are with 3-4 rooms. 96% replied that they own the homes. Only 3% replied that they live in the rented houses. 72% respondents replied that they use common toilets and 24% have their own toilets. 5% respondents have no toilet facility at all. They use open space or others for their toilets. 42% respondents use common tube well for their water, 34% use pond, and 21% use river water. In terms of housing status, the situation in Cox's Bazar and Sitakunda was better. About the satisfaction regarding their housing, 56% respondents replied bad, 19% very bad, and 24% good. 87% respondents have no TV,

11% have black and white TV, 2% have color TV. 78% have no radio, and 20% own radios. 99% respondents have no refrigerator and only less than 1% have refrigerator. 97% have no bicycle, and only 2% are having 1 bicycle. Owners of color TV are mainly from Cox's Bazar and Sitakunda and 1% refrigerator owners are also from Cox's Bazar.

Occupation of father and change in Occupation (Table-8):

About the occupation of father, 13% replied for Bahaddar, 5% for Mahjee, 4% for crew member, 3% for fish processor, 31% for agriculture, 21% for fishing and agriculture, 4% for Paiker and 7% for Bepari. Regarding the change in occupation by any family member, 28% replied that they have changed the occupation. The percentage of change in occupation was found higher in Kola Para, Morel Gonj, Dhumki mainly from agriculture to fishing. The major reasons for changing the occupation are hard to make a living(12%), not profitable (7%), and security reasons (6%).

Migration (Table-9):

Most respondents (68%) have been living in their birth place and 32% are migrated. The migration rates was found higher in Morel Gonj, Dhumki, Asasuni and then Sitakunda. The major reasons for migration are 16% for natural disasters, 7% for change in occupation, and 4% for different discrimination. Most migrants are from the neighboring locality or within the same district. 99% respondents have been living in the same locality for more than 10 years.

Fishing Assets of the Respondent (Table-10):

29% respondents replied that they do not possess any fishing assets. 17% have gill/push nets, 13% have small boat, net and Goas, 11% have current nets, 9% have small boat, 8% have big boat, net and Goas and 4% have engine boats. Among the owners of the fishing assets, 5% replied that they have arranged the assets from their own source, 24% by cash loan,11% on credit, 16% on loan and credit, and 12% on cash loan and own source.

Savings of the Respondent (Table-11):

68% respondents have no savings and 11% have cash savings mainly with NGOs, 19% have kind like little ornaments or other domestic animals. Among the savings holders, the main reasons are 7% save for housing.6% for buying fishing materials, 5% for children education.

Loan and Purpose of Loan (Table-12):

79% respondents replied that they have some sort of loan. Main loan owners are husband 41%, wife 23% and both husband and wife 11%. Female loan owners are mainly NGOs women members. The sources of loan are mainly NGOs which stand

for 31%, 11% for Dadandar, 10% for Mahajan, 7% for association, 7% for Dadandar and NGOs, 6% for Bank(mainly Grameen or Krishi bank), and about 6% for relatives. 37% respondents replied that the purpose for taking loan is for buying fishing materials. 24% for catch fish, 6% for meeting daily expenditure, 6% for repay previous loan, 3% for housing, 2% for marriage of family members.

Organization Affiliation of the Respondent (Table-13):

About 47% respondents told that they are affiliated with different organization 53% have no organization affiliation. Among the respondents, 36% replied that they are the member of NGOs, 3% of fishermen association, 5% of local community like Puja Mondap, Masjid committee etc, and 3% of other club and societies. In terms of nature of membership, 45% replied that they are general members, 25 president/secretary and 1% executive members. The reasons they are the members are 34% for obtaining recommendation to get loan, 6% get loan directly from association, 6% to organize the community and 1% settle dispute among communities.

Attitude to NGOs (Table-14):

Among the respondents, 49% told that NGOs are beneficial for community for giving loan, 13% for providing loan and education, 8% for providing education, and 5% for the community development. About the reasons for not to be the member of organization, 30% replied that there is no benefit from organization, and 10% replied that there is no such organization,

Problem with other Community (Table-15):

About 69% respondents replied that they face problem with other communities. For the types of problems with other communities, 14% replied that the other communities buy fish by force, 14% for no social mix with upper or middle class people of other communities, 9% for terrorism , 8% for no invitation on any occasion from other community, 7% for offering less price for fish, 6% for no cooperation from police or government, and 5% for obstructing religious ceremonies. If there is any conflict between the communities or within communities, 39% replied that the conflict are negotiated through local authorities, 36% through community leaders, and 3% through police or government agencies.

Experience about Piracy (Table-16):

About 53% respondents told that they have experienced piracy in the sea, 37% have experiences for 1-2 times, and 14% for 3-4 times. For the nature of violence faced by piracy , 19% told that the pirates cut their nest, 17% replied for snatched catches by force, 6% for demanding cash money, and 5% for both snatched catches and cut net in the sea.

Government Services in the Community (Table-17):

65% respondents told that they have primary schools in communities and 35% told they have primary schools together with cyclone shelter. Still 91% respondents do not think that government services are sufficient. 25% told, the reasons they are not satisfied with government is that there is no medical center in their communities. 13% told that government do not protect them from river erosion. 11% told that there is no high school in their communities. 11% told that they do not get help for preventing them from piracy. 13% told that they want deep tube well but government do not help. 5% want Light House in the sea but government never listen to it.

Status of Casting Vote (Table-18):

77% respondents told that they can cast their vote in favor of their candidates in the nation and local level elections. In terms of casting vote, 22% think that it is for peace, 12% think that it is their right, 37% cast vote for development, 23% respondents told that they do not or can not cast vote. Among them, 9% told that they are prevented from entering vote center, 12 % told that they are given threat not to go to vote center, 2% do not have their names listed in the voter list. 57% respondents told that they decide themselves for casting their vote, 6% told they are influenced by government officials, 9% by community leaders, and 3% by local leaders. Data indicates that the obstruction faced by the respondents to exercise their citizen right in casting vote specially in Sitakunda and Asasunu are mainly Hindu/minority dominated areas. The major problem s for them are that they are been given threat by local political leaders/cadres not to go to vote center or even they go, the cadres create a lot of nonsense to prevent them entering inside the centers.

Recommendations:

1. Fishing as profession is getting more difficult and risky for the fishermen specially for the traditional fisherfolk because of Dadon or prevailing money lending operation. Therefore, effective initiatives or an action plan on immediate, short and long term basis for poverty alleviation through income generation from alternative sources should be considered by the government, private enterprises and NGOs/Development agencies;
2. Measures should be taken by concerned authorities to ensure that fishing communities will be able to accommodate the growth of population and economic activity expected in the future;
3. Given the scarcity of financial resources, priority needs to be given to identifying and introducing low cost methods of supplying services and facilities (housing, education, medical, water, sanitation, electricity etc) and also methods of institutional provision to improve the quality of life leading to developing Capital Assets;
4. Proper and adequate training, dissemination of information, education and communication should be arranged for fishermen to address and face vulnerability

and also to share the similar experiences with other poverty driven fishing communities around the world;

5. Intervention must be undertaken to create a positive notion and attitude towards women empowerment in the fishing communities;
6. Awareness initiatives should be generated among fisherfolk for changing behavior and moral strength to establishing democratic, civil and human rights and be part in local power structure through participation in different socio-cultural-religious and economic activities;
7. Different inquisitive and innovative methodologies for undertaking projects to depict SL Approach and to go for in-depth research in regard to institutions, policies and processes and their impacts on fishing communities should be encouraged.

Conclusion:

There are about 8% of the total population of the country depends on fisheries. These large number fisherfolk is highly neglected not only by the government or local government or other concerned authorities, but also by the community itself. Though this fisherfolk has a big contribution to the national economy, they are excluded from development approach in the society to a greater extent. Sustainable Livelihoods Approach should be the sanctimonious framework for the substantial upgrading of the fishing communities in coastal Bangladesh. If the communities are properly educated, skilled, trained and supported by alternative financial resources for consumption credit for their survival throughout the year, they are sure to produce social goods instead of liabilities from which the whole nation will be benefited.

References:

1. Alam, K.(1996), *Two Fishing Villages of Bangladesh: A Community study*, PhD thesis, Departemnt of Development and Planning, Aalborg University, Denmark.
2. Anon (1997), Are credit institutions biased against fisherfolk? Article in BOBP PHF News, issue No. 10, april 1997, Chennai.
3. Boyce, J K.(1987) *Agrarian Impasse in Bengal – Institutional Constrants to Technological Change,* Oxford University Press.
4. DFID Bulletin,(1997) Socio-Economic Methodologies for Coastal Fishing Communities: The Example of Set Bag Net Communities in Bangladesh, Chennai, India.
5. DFID, (2000). Sustainable Livelihoods Guidance Sheet.
6. Gough, k.(1981) *Rural Society in Southeast India*, Cambridge University Press, Cambridge.
7. Khan, A A.(1982), *Some Aspect of Peasant Behavior in Bengal – A Neo- classical Analysis,* Asiatic Society of Bangladesh, Dhaka.
8. NRI Report No. 2613, Report of Workshop on "Poverty Alleviation and Livelihood Security among the Coastal Fishing Communities – Market and Credit Issues" 27-28 March 2001, Chittagong, Bangladesh.
9. Qadir, S A.(1981). *Modernization of an agrarian Society, National Institute of Local Government,* Dhaka.

Crosstabs

Table # 1 **Age of the Respondent**

			Name of Thana						
			Cox's Bazar Sadar	Sitakunda	Dhumki	Kola Para	Morel Ganj	Ashasuni	Total
Age of the Respondent	20-29	Count	8	10	9	11	2	6	46
		% of Total	2.6%	3.2%	2.9%	3.5%	.6%	1.9%	14.8%
	30-39	Count	20	13	17	25	16	15	106
		% of Total	6.5%	4.2%	5.5%	8.1%	5.2%	4.8%	34.2%
	40-49	Count	9	14	11	6	16	14	70
		% of Total	2.9%	4.5%	3.5%	1.9%	5.2%	4.5%	22.6%
	50-59	Count	7	7	10	6	12	4	46
		% of Total	2.3%	2.3%	3.2%	1.9%	3.9%	1.3%	14.8%
	60-69	Count	5	2	4	2	5	6	24
		% of Total	1.6%	.6%	1.3%	.6%	1.6%	1.9%	7.7%
	70+	Count	2	7	3	3		3	18
		% of Total	.6%	2.3%	1.0%	1.0%		1.0%	5.8%
Total		Count	51	53	54	53	51	48	310
		% of Total	16.5%	17.1%	17.4%	17.1%	16.5%	15.5%	100.0%

Table # 2 **Size of the Household**

Name of Thana		Total number of Family members	Total number of male Family members	Total number of female Family members
Cox's Bazar Sadar	Mean	6.63	3 71	2.92
	% of Total N	16.5%	16.5%	16.5%
Sitakunda	Mean	6.04	3.25	2.81
	% of Total N	17.1%	17.1%	17.1%
Dhumki	Mean	5.85	2.74	3.11
	% of Total N	17.4%	17.4%	17.4%
Kola Para	Mean	5.36	2.74	2.62
	% of Total N	17.1%	17.1%	17.1%
Morel Ganj	Mean	4.90	2.71	2.18
	% of Total N	16.5%	16.5%	16.5%
Ashasuni	Mean	4.77	2.15	2.63
	% of Total N	15.5%	15.5%	15.5%
Total	Mean	5.60	2.89	2.72
	% of Total N	100.0%	100.0%	100.0%

Table # 3 **Education of the Respondent**

			Name of Thana						
			Cox's Bazar Sadar	Sitakunda	Dhumki	Kola Para	Morel Ganj	Ashasuni	Total
Education of the Respondent	No education	Count	35	34	43	31	24	34	201
		% of Total	11.3%	11.0%	13.9%	10.0%	7.7%	11.0%	64.8%
	Primary School	Count	9	11	7	18	6	5	56
		% of Total	2.9%	3.5%	2.3%	5.8%	1.9%	1.6%	18.1%
	High School	Count		8	2	4	11	8	33
		% of Total		2.6%	.6%	1.3%	3.5%	2.6%	10.6%
	Informal School	Count	3						3
		% of Total	1.0%						1.0%
	SSC	Count	2		1		6	1	10
		% of Total	.6%		.3%		1.9%	.3%	3.2%
	Madrasha	Count	2						2
		% of Total	.6%						.6%
	College	Count			1		4		5
		% of Total			.3%		1.3%		1.6%
Total		Count	51	53	54	53	51	48	310
		% of Total	16.5%	17.1%	17.4%	17.1%	16.5%	15.5%	100.0%

Table # 4 **Occupation of the Respondent**

			Name of Thana						
			Cox's Bazar Sadar	Sitakunda	Dhumki	Kola Para	Morel Ganj	Ashasuni	Total
Occupation of the Respondent	Bahaddar(Boat Owner)	Count	8	8	18	10		4	48
		% of Total	2.6%	2.6%	5.8%	3.2%		1.3%	15.5%
	Mahjee(Captain)	Count	3	3	3	1	1	1	12
		% of Total	1.0%	1.0%	1.0%	.3%	.3%	.3%	3.9%
	Second mahjee(Goloiga)	Count			3	1		3	7
		% of Total			1.0%	.3%		1.0%	2.3%
	Crew member	Count	9	17	4	7	1	10	48
		% of Total	2.9%	5.5%	1.3%	2.3%	.3%	3.2%	15.5%
	Fish processor	Count		12	6	4		6	28
		% of Total		3.9%	1.9%	1.3%		1.9%	9.0%
	Agriculture	Count	1			11	3	1	16
		% of Total	.3%			3.5%	1.0%	.3%	5.2%
	Self employed	Count			2		2	3	7
		% of Total			.6%		.6%	1.0%	2.3%
	Daily Worker	Count	3	1	1	2	1	1	9
		% of Total	1.0%	.3%	.3%	.6%	.3%	.3%	2.9%
	Fishing+Agriculture	Count	2		8	4	23	2	39
		% of Total	.6%		2.6%	1.3%	7.4%	.6%	12.6%
	Mahajan	Count			1	2	3		6
		% of Total			.3%	.6%	1.0%		1.9%
	Paikar	Count	10	1		3	3	3	20
		% of Total	3.2%	.3%		1.0%	1.0%	1.0%	6.5%
	Dadandar	Count	1	1		3			5
		% of Total	.3%	.3%		1.0%			1.6%
	Bepari(Fish hawker)	Count	8	2	2		2	8	22
		% of Total	2.6%	.6%	.6%		.6%	2.6%	7.1%
	Others	Count	6	8	6	5	12	6	43
		% of Total	1.9%	2.6%	1.9%	1.6%	3.9%	1.9%	13.9%
Total		Count	51	53	54	53	51	48	310
		% of Total	16.5%	17.1%	17.4%	17.1%	16.5%	15.5%	100.0%

Table # 5 Respondent's yearly Income from Fishing

			Name of Thana						Total
			Cox's Bazar Sadar	Sitakunda	Dhumki	Kola Para	Morel Gani	Ashasuni	
Respondent's yearly income from fishing	11000-20000	Count	4	7	3	1			15
		% of Total	1.3%	2.3%	1.0%	.3%			4.8%
	21000-30000	Count	19	19	15	17	30	33	133
		% of Total	6.1%	6.1%	4.8%	5.5%	9.7%	10.6%	42.9%
	31000-40000	Count	11	14	27	10	12	10	84
		% of Total	3.5%	4.5%	8.7%	3.2%	3.9%	3.2%	27.1%
	41000-50000	Count	7	1	3	11	3		25
		% of Total	2.3%	.3%	1.0%	3.5%	1.0%		8.1%
	51000-60000	Count	2	4	2	1	1		10
		% of Total	.6%	1.3%	.6%	.3%	.3%		3.2%
	61000-70000	Count	1			1			2
		% of Total	.3%			.3%			.6%
	71000-80000	Count			1	2	1		4
		% of Total			.3%	.6%	.3%		1.3%
	80000+	Count	4	1		1	2		8
		% of Total	1.3%	.3%		.3%	.6%		2.6%
	NA	Count	3	7	3	9	2	5	29
		% of Total	1.0%	2.3%	1.0%	2.9%	.6%	1.6%	9.4%
Total		Count	51	53	54	53	51	48	310
		% of Total	16.5%	17.1%	17.4%	17.1%	16.5%	15.5%	100.0%

Table # 6 **Access to land of the Respondent**

			Name of Thana						Total
			Cox's Bazar	Sitaconda	Dumkhi	Kolapare	Morelgonj	Asasuni	
Access to land	Yes	Count	31	17	21	39	43	28	179
		% of Total	10.0%	5.5%	6.8%	12.6%	13.9%	9.0%	57.7%
	No	Count	20	36	33	14	8	20	131
		% of Total	6.5%	11.6%	10.6%	4.5%	2.6%	6.5%	42.3%
Total		Count	51	53	54	53	51	48	310
		% of Total	16.5%	17.1%	17.4%	17.1%	16.5%	15.5%	100.0%

Table # 7 **Status of Home of the Respondent**

			Name of Thana						Total
			Cox's Bazar	Sitaconda	Dumkhi	Kolapare	Morelgonj	Asasuni	
Description of home	Bambo-Kuttcha	Count	38	43	45	26	34	46	232
		% of Total	12.3%	13.9%	14.5%	8.4%	11.0%	14.8%	74.8%
	Building	Count					1		1
		% of Total					.3%		.3%
	Semi building	Count	9	1				1	11
		% of Total	2.9%	.3%				.3%	3.5%
	C-1 Sheet	Count	4	9	9	27	16	1	66
		% of Total	1.3%	2.9%	2.9%	8.7%	5.2%	.3%	21.3%
Total		Count	51	53	54	53	51	48	310
		% of Total	16.5%	17.1%	17.4%	17.1%	16.5%	15.5%	100.0%

Table # 8 Occupation of father of the Respondent

			Name of Thana						Total
			Cox's Bazar	Sitaconda	Dumkhi	Kolapare	Moreloon	Asasuni	
Occupation of father	Bahaddar (Boat Owner)	Count	5	6	6		1	23	41
		% of Total	1.6%	1.9%	1.9%		.3%	7.4%	13.2%
	Mahjee (Captain)	Count	11	2	1	1	1		16
		% of Total	3.5%	.6%	.3%	.3%	.3%		5.2%
	Crew member	Count	6	5					11
		% of Total	1.9%	1.6%					3.5%
	Fish processor	Count		6	1	1			8
		% of Total		1.9%	.3%	.3%			2.6%
	Agriculture	Count		4	26	19	39	8	96
		% of Total		1.3%	8.4%	6.1%	12.6%	2.6%	31.0%
	Self Employed	Count	3						3
		% of Total	1.0%						1.0%
	Daily worker	Count	2				1		3
		% of Total	.6%				.3%		1.0%
	Fishing+Agriculture	Count	11	7	7	21	6	14	66
		% of Total	3.5%	2.3%	2.3%	6.8%	1.9%	4.5%	21.3%
	Mahajan	Count	1	2	1				4
		% of Total	.3%	.6%	.3%				1.3%
	Paikar	Count	2	5		3		1	11
		% of Total	.6%	1.6%		1.0%		.3%	3.5%
	Dadondar	Count		1		2			3
		% of Total		.3%		.6%			1.0%
	Bepari(Fish hawker)	Count	6	7		4	1	2	20
		% of Total	1.9%	2.3%		1.3%	.3%	.6%	6.5%
	Aratdar	Count		3					3
		% of Total		1.0%					1.0%
	Others	Count	4	5	12	2	2		25
		% of Total	1.3%	1.6%	3.9%	.6%	.6%		8.1%
Total		Count	51	53	54	53	51	48	310
		% of Total	16.5%	17.1%	17.4%	17.1%	16.5%	15.5%	100.0%

Table # 9 **Family Migration**

			Name of Thana						Total
			Cox's Bazar	Sitaconda	Dumkhi	Kolapare	Morelgonj	Asasuni	
Family migration	Yes	Count	6	11	27	5	30	19	98
		% of Total	1.9%	3.5%	8.7%	1.6%	9.7%	6.1%	31.6%
	No	Count	45	42	27	48	21	29	212
		% of Total	14.5%	13.5%	8.7%	15.5%	6.8%	9.4%	68.4%
Total		Count	51	53	54	53	51	48	310
		% of Total	16.5%	17.1%	17.4%	17.1%	16.5%	15.5%	100.0%

Table # 10 **Fishing Assets of the Respondent**

			Name of Thana						Total
			Cox's Bazar	Sitaconda	Dumkhi	Kolapare	Morelgonj	Asasuni	
Respondent's fishing assets	Big boat+Net+Goas	Count	5	7	4	6	1	3	26
		% of Total	1.6%	2.3%	1.3%	1.9%	.3%	1.0%	8.4%
	Small Boat+Net+Goas	Count	3	6	12	10	2	7	40
		% of Total	1.0%	1.9%	3.9%	3.2%	.6%	2.3%	12.9%
	Small Boat	Count	2	6	4	7	5	5	29
		% of Total	.6%	1.9%	1.3%	2.3%	1.6%	1.6%	9.4%
	Current Nets	Count	2	7	14	1	2	7	33
		% of Total	.6%	2.3%	4.5%	.3%	.6%	2.3%	10.6%
	Gill net/Push nets	Count	5	12	9	14	7	5	52
		% of Total	1.6%	3.9%	2.9%	4.5%	2.3%	1.6%	16.8%
	Engine Boat	Count	6	2		3			11
		% of Total	1.9%	.6%		1.0%			3.5%
	Others	Count	4	5	3	2	9	3	26
		% of Total	1.3%	1.6%	1.0%	.6%	2.9%	1.0%	8.4%
	Cash money	Count		1		1	2		4
		% of Total		.3%		.3%	.6%		1.3%
	None	Count	24	7	8	9	23	18	89
		% of Total	7.7%	2.3%	2.6%	2.9%	7.4%	5.8%	28.7%
Total		Count	51	53	54	53	51	48	310
		% of Total	16.5%	17.1%	17.4%	17.1%	16.5%	15.5%	100.0%

Table # 11 **Savings of the Respondent**

			Name of Thana						
			Cox's Bazar	Sitaconda	Dumkhi	Kolapare	Morelgonj	Asasuni	Total
Savings	Yes	Count	16	16	12	21	25	11	101
		% of Total	5.2%	5.2%	3.9%	6.8%	8.1%	3.5%	32.6%
	No	Count	35	37	42	32	26	37	209
		% of Total	11.3%	11.9%	13.5%	10.3%	8.4%	11.9%	67.4%
Total		Count	51	53	54	53	51	48	310
		% of Total	16.5%	17.1%	17.4%	17.1%	16.5%	15.5%	100.0%

Table # 12 **Status of Loan of the Respondent**

			Name of Thana						
			Cox's Bazar	Sitaconda	Dumkhi	Kolapare	Morelgonj	Asasuni	Total
Does anyone in your household have a loan	Yes	Count	35	45	51	46	34	34	245
		% of Total	11.3%	14.5%	16.5%	14.8%	11.0%	11.0%	79.0%
	No	Count	16	8	3	7	17	14	65
		% of Total	5.2%	2.6%	1.0%	2.3%	5.5%	4.5%	21.0%
Total		Count	51	53	54	53	51	48	310
		% of Total	16.5%	17.1%	17.4%	17.1%	16.5%	15.5%	100.0%

Table # 13 **Organization affiliation of the Respondent**

			Name of Thana						
			Cox's Bazar	Sitaconda	Dumkhi	Kolapare	Morelgonj	Asasuni	Total
Organization affiliation	Yes	Count	12	33	32	17	28	25	147
		% of Total	3.9%	10.6%	10.3%	5.5%	9.0%	8.1%	47.4%
	No	Count	39	20	22	36	23	23	163
		% of Total	12.6%	6.5%	7.1%	11.6%	7.4%	7.4%	52.6%
Total		Count	51	53	54	53	51	48	310
		% of Total	16.5%	17.1%	17.4%	17.1%	16.5%	15.5%	100.0%

Table # 14 Attitude to NGOs

			Name of Thana						Total
			Cox's Bazar	Sitaconda	Dumkhi	Kolapare	Morelgonj	Asasuni	
NGO beneficial for community	Get loan	Count	16	22	31	20	34	28	151
		% of Total	5.2%	7 1%	10.0%	6 5%	11.0%	9.0%	48 7%
	Education	Count	3	6	1	9	5		24
		% of Total	1.0%	1.9%	.3%	2.9%	1.6%		7.7%
	Remve poverty	Count	1					2	3
		% of Total	.3%					.6%	1.0%
	Beneficial for development	Count	4	10	1	1			16
		% of Total	1.3%	3.2%	.3%	.3%			5.2%
	Helping people	Count	5	3		2			10
		% of Total	1.6%	1.0%		.6%			3.2%
	Don't Response	Count	1	1	16	5	1	1	25
		% of Total	.3%	.3%	5.2%	1.6%	.3%	.3%	8.1%
	NA	Count	21	10	2	5	2	2	42
		% of Total	6.8%	3.2%	.6%	1.6%	.6%	.6%	13.5%
	Get loan& Education	Count		1	3	11	9	15	39
		% of Total		.3%	1.0%	3.5%	2.9%	4.8%	12.6%
Total		Count	51	53	54	53	51	48	310
		% of Total	16.5%	17 1%	17.4%	17.1%	16.5%	15.5%	100.0%

Table # 15 Problem with other community

			Name of Thana						Total
			Cox's Bazar	Sitaconda	Dumkhi	Kolapare	Morelgonj	Asasuni	
Problem face with other community	Yes	Count	33	38	41	36	37	28	213
		% of Total	10.6%	12.3%	13.2%	11.6%	11.9%	9.0%	68.7%
	No	Count	18	15	13	17	14	20	97
		% of Total	5.8%	4.8%	4.2%	5.5%	4.5%	6.5%	31.3%
Total		Count	51	53	54	53	51	48	310
		% of Total	16.5%	17.1%	17.4%	17.1%	16.5%	15.5%	100.0%

Table # 16 **Experience about Piracy**

			Name of Thana						Total
			Cox's Bazar	Sitaconda	Dumkhi	Kolapare	Morelgonj	Asasuni	
Experience about piracy	Yes	Count	33	43	19	33	9	28	165
		% of Total	10.6%	13.9%	6.1%	10.6%	2.9%	9.0%	53.2%
	No	Count	18	10	35	20	42	20	145
		% of Total	5.8%	3.2%	11.3%	6.5%	13.5%	6.5%	46.8%
Total		Count	51	53	54	53	51	48	310
		% of Total	16.5%	17.1%	17.4%	17.1%	16.5%	15.5%	100.0%

Table # 17 **Attitude towards Govt. services**

			Name of Thana						Total
			Cox's Bazar	Sitaconda	Dumkhi	Kolapare	Morelgonj	Asasuni	
Govt. services are available at your community	Primary school	Count	2	16	32	50	51	48	199
		% of Total	.6%	5.2%	10.3%	16.1%	16.5%	15.5%	64.2%
	Cyclone shelter	Count	1			1			2
		% of Total	.3%			.3%			.6%
	Primary school&Cyclone centre	Count	48	37	22	2			109
		% of Total	15.5%	11.9%	7.1%	.6%			35.2%
Total		Count	51	53	54	53	51	48	310
		% of Total	16.5%	17.1%	17.4%	17.1%	16.5%	15.5%	100.0%

Table # 18 **Situation of Casting Vote**

			Name of Thana						Total
			Cox's Bazar	Sitaconda	Dumkhi	Kolapare	Morelgonj	Asasuni	
Casting vote	Yes	Count	41	40	44	44	40	33	242
		% of Total	13.2%	12.9%	14.2%	14.2%	12.9%	10.6%	78.1%
	No	Count	10	13	10	9	11	15	68
		% of Total	3.2%	4.2%	3.2%	2.9%	3.5%	4.8%	21.9%
Total		Count	51	53	54	53	51	48	310
		% of Total	16.5%	17.1%	17.4%	17.1%	16.5%	15.5%	100.0%

APPENDICES

Appendix 1: List of Workshop Participants

Appendix 2: Workshop Programmes

Appendix 3: Invitation Letter and Cards

APPENDIX 1

List of Workshop Participants

CONSULTATION WORKSHOP ON "FISH DISTRIBUTION FROM COASTAL COMMUNITIES – MARKET AND CREDIT ACCESS ISSUES"

Date : 22nd & 23rd July 2002

Sponsored by the UK Department for International Development (DFID)

Venue: Silver Spoon Conference Hall, Sattar Chamber, 99 Agrabad Commercial Area, Chittagong, Bangladesh

LIST OF PARTICIPANTS

Name & Designation	Organisation & Location	Participated on	
		22.07.02	23.07.02
1. Mr. Shachin Kumar Roy, a fisherfolk representative	From the village Kulla, Satkhira district	√	√
2. Mr. Mohammad Alamgir, a fisherfolk representative	From the village Kuakata Panjupara, Patuakhali district	√	√
3. Mr. Monsur Alam, a fisherfolk representative	From the village Hatkholapara, Cox's Bazaar district	√	√
4. Mr. Shupan Kumar Roy, a fisherfolk representative	From the village Kulla, Satkhira district	√	√
5. Mr. Abdur Rahman Akhand, a fisherfolk representative	From the village Lebukhali, Patuakhali district	√	√
6. Mr. Mohammad Zahangir, a fisherfolk representative	From the village Debraj, Bagerhat district	√	√
7. Mr. Jamiat Ali Showdagar, Fish Merchant (Aratdar)	Fishery Ghat and Reazuddin Bazaar, Chittagong	√	
8. Dr. Md. Fashiul Alam, Professor	Dept. of Management, Chittagong University, Chittagong (presided over the Workshop)	√	√
9. Mr. Mostafa Nuruzzaman, Director	'SHUSHILAN' – an NGO, Kaliganj, Satkhira district, and a COFCON-representative	√	√
10. Dr Md. Akhteruzzaman, Technical Manager	SUFER Project, DFID, Dhaka	√	
11. Dr. Nesar Ahmed, Assistant Professor	Dept. of Fisheries Management, Bangladesh Agricultural University, Mymensingh	√	√
12. Mr. Mohammad Idris, Assistant Editor	'Purbakone' – a daily newspaper of Chittagong	√	
13. Dr. M. A. Azadi, Professor	Dept. of Zoology, Chittagong University, Chittagong	√	
14. Dr. Mohammed Solaiman, Professor	Dept. of Marketing, Chittagong University, Chittagong	√	√
15. Dr. Iftekhar Uddin Chowdhury, Professor	Dept. of Sociology, Chittagong University, Chittagong	√	√

Name & Designation	Organisation & Location	Participated on	
		22.07.02	23.07.02
16. Mr. A. N. M. Nurul Kareem, Professor	Dept. of Marketing, Chittagong University, Chittagong	√	√
17. Mr. Sagib Kumar Ghosh, Assistant Professor	Dept. of Marketing, Chittagong University, Chittagong	√	√
18. Ms. Tunazzina Sultana, Lecturer	Dept. of Marketing, Chittagong University, Chittagong	√	
19. Mr. Md. Anamul Hoq, Research Assistant	Dept. of Sociology, Chittagong University, Chittagong	√	√
20. Ms. Fatema Johara Ruma, Student	Dept. of Accounting, Chittagong University, Chittagong	√	
21. Mr. Ulrich Kleih Marketing Economist	Natural Resources Institute (NRI), University of Greenwich, UK	√	√
22. Mr. Ansen Ward, Researcher	IMM Ltd., University of Exeter, UK	√	√
23. Dr. Khursid Alam, Executive Director	Community Development Centre (CODEC), Chittagong	√	√
24. Mr. Kamal Sengupta, Deputy Executive Director	Community Development Centre (CODEC), Chittagong		√
25. Mr. Ranajit Dastidar, Deputy Director	Community Development Centre (CODEC), Chittagong	√	√
26. Mr. Utpal Dutta, Manager	Community Development Centre (CODEC), Chittagong	√	√
27. Mr. Didarul Alam Chowdhury, Deputy Director	Community Development Centre (CODEC), Chittagong	√	√
28. Mr. Absar Habib, Deputy Director	Community Development Centre (CODEC), Chittagong	√	√
29. Mr. S. M. Giasuddin, Deputy Director	Community Development Centre (CODEC), Chittagong	√	√
30. Mr. Md. Shamsul Alam, Deputy Director	Community Development Centre (CODEC), Chittagong	√	√
31. Mr. Munir Helal, Senior Manager	Community Development Centre (CODEC), Chittagong	√	√
32. Ms. Alpana Barua, Senior Manager	Community Development Centre (CODEC), Chittagong	√	√
33. Mr. Abdullah Al Mamun, Senior Manager	Community Development Centre (CODEC), Chittagong	√	√
34. Mr. A. Z. M. Alamgir Programme Manager	Community Development Centre (CODEC), Chittagong	√	√
35. Mr. Kiron Das, Office Manager	Community Development Centre (CODEC), Chittagong	√	√

CONSULTATION WORKSHOP ON "FISH DISTRIBUTION FROM COASTAL COMMUNITIES: MARKET AND CREDIT ACCESS ISSUES"

25th July 2002

Sponsored by the UK Department For International Development (DFID)

Venue: Conference Hall, Bangladesh YWCA Bhaban, 3/23 Iqbal Road, Mohammadpur, Dhaka, Bangladesh

LIST OF PARTICIPANTS

Sl. No.	Name of Participant	Designation	Organisation & Location
1.	Mr. Md. Tasharuf Hossain Forhaji	Senior Assistant Chief	Ministry of Fisheries & Livestock, Government of Bangladesh, Dhaka
2.	Mr. Md. Harun or Rashid	Assistant Chief	Ministry of Fisheries & Livestock, Government of Bangladesh, Dhaka
3.	Mr. Iqbal M. Fattah	S. P. Coordinator	Social Forestry, PROSHIKA Manobik Unnayan Kendra, Dhaka
4.	Mr. Shankar Bain	S. S. Fish	BRAC, Dhaka
5.	Mr. S. M. Shamim Anwar	Managing Director	Grameen Uddog, Dhaka
6.	Mr. Zamal Uddin Biswas	Deputy General Manager	Grameen Bank Dhaka
7.	Mr. Mahbubul Hasan	Chief Coordinator	Coastal Fisherfolk Community Network (COFCON), Dhaka
8.	Mr. Syed Manir Hossain	Communication & Documentation Officer	UDDIPAN (an NGO), Dhaka
9.	Dr. Md. Matiur Rahman	Training Coordinator	ICLARM, Dhaka
10.	Mr. Nazir Ahmed Khan	Programme Support Officer	DFID Bangladesh, Dhaka
11.	Dr. Nesar Ahmed	Assistant Professor	Dept. of Fisheries Management, Bangladesh Agricultural University, Mymensingh
12.	Mr. Chris P. Morrice	Project Coordinator	SUFER Project, Dhaka
13.	Dr. Akhteruzzaman	Technical Manager	SUFER Project, Dhaka
14.	Mr. Lars Iskjaer	Programme Coordinator/Head of HRGG-PSU	Human Rights & Good Governance, Programme Support Unit, Danida/RDE, Dhaka
15.	Mr. Mike Brewin	Team Leader	Go-Interfish, CARE Bangladesh, Dhaka
16.	Mr. Richard Banks	Deputy Team Leader	Fisheries Futures, Fisheries Sector Review, Dhaka

Sl. No.	Name of Participant	Designation	Organisation & Location
17.	Dr. Mohammed Solaiman,	Professor	Dept. of Marketing, Chittagong University, Chittagong
18.	Dr. Iftekhar Uddin Chowdhury	Professor	Dept. of Sociology, Chittagong University, Chittagong
19.	Mr. A. N. M. Nurul Kareem	Professor	Dept. of Marketing, Chittagong University, Chittagong
20.	Mr. Sagib Kumar Ghosh	Assistant Professor	Dept. of Marketing, Chittagong University, Chittagong
21.	Ms. Tunazzina Sultana	Lecturer	Dept. of Marketing, Chittagong University, Chittagong
22.	Mr. Ulrich Kleih	Principal Scientist & Marketing Economist	Natural Resources Institute (NRI), University of Greenwich, UK
23.	Mr. Ansen Ward	Researcher (presided over the Workshop)	IMM Ltd., University of Exeter, UK
24.	Dr. Khursid Alam	Executive Director	Community Development Centre (CODEC), Chittagong
25.	Mr. Kamal Sengupta	Deputy Executive Director	Community Development Centre (CODEC), Chittagong
26.	Mr. Ranajit Dastidar	Deputy Director	Community Development Centre (CODEC), Chittagong
27.	Mr. Utpal Dutta	Manager	Community Development Centre (CODEC), Chittagong

APPENDIX 2

Workshop Programmes

Workshop Schedule

CONSULTATION WORKSHOP ON "FISH DISTRIBUTION FROM COASTAL COMMUNITIES – MARKET AND CREDIT ACCESS ISSUES"

22nd & 23rd July 2002

Sponsored by the UK Department For International Development (DFID)

Venue: Conference Hall of Silver Spoon, Agrabad Commercial Area, Chittagong, Bangladesh

22nd July 2002

10:00 AM	**Registration**
10:30 AM	**Introduction & Welcome speech – Dr. Khursid Alam, Community Development Centre (CODEC), Chittagong, Bangladesh**
10:40 AM	**Introduction of Participants**
10:50 AM	**Presentation by Mr. Ranajit Dastidar, CODEC : "How Sustainable are Livelihoods in the Coastal Fishing Communities – Findings from a Participatory Rural Appraisal"**
11:10 AM	**Discussion**
11:20 AM	***Tea break***
11:30 AM	**Presentation by Mr. Ulrich K. Kleih, NRI (Natural Resources Institute), University of Greenwich, UK : "Fish Distribution from Coastal Communities – Marketing of Marine Fish and Credit Access Issues"**
11.50 AM	**Discussion**
12:00 Noon	**Presentation by Professor Nurul Karim/Mr. Sagib Kumar Ghose, Assistant Professor, of the Marketing Department, University of Chittagong (UoC) : "Fish Distribution from Coastal Communities – Marketing (Results of UoC Survey)"**
12:20 PM	**Discussion**
12:30 PM	**Presentation by Mr. Ansen R. Ward, NRI : "Fish Distribution from Coastal Communities – Technical Post-Harvest Issues"**
12:50 PM	**Discussion**
01:00 PM	***Lunch break***

02:00 PM	**Presentation by Dr. Iftekhar Uddin Chowdhury, Professor of the Sociology Department, University of Chittagong (UoC) : "Fish Distribution from Coastal Communities – Social, Institutional and Policy Issues"**
02:20 PM	**Discussion**
02:30 PM	**Presentation by Professor (Dr.) Md. Solaiman/Ms. Tunazzina Sultana, Lecturer, of the Marketing Department, University of Chittagong (UoC) : "Fish Distribution from Coastal Communities – Credit and Gender Issues"**
02:50 PM	**Discussion**
03:00 PM	***Tea break***
03:10 PM	**Presentation by Dr. Khursid Alam, CODEC : "Institutional Issues & Credit: The NGO Experience in Coastal Communities from CODEC's Perspective"**
03:30 PM	**Discussion**
03:40 PM	**Presentation by Mr. Ulrich K. Kleih, NRI : Methodology of research on "Fish Distribution from Coastal Communities – Market and Credit Access Issues"**
04:00 PM	**Discussion**
04:10 PM	**Comments by the Session President**
04:30 PM	**End of the day**

23rd July 2002

10:00 AM	**Presentation of Summary of the first day: Mr. Ansen R. Ward, NRI**
10:30 AM	**Group Activities (4 Working Groups) : Development of Recommendations**
11:15 AM	***Tea break***
11:30 AM	**Group Activities (4 Working Groups) : continued**
12:30 PM	**Plenary Session : Presentation of Group-1**
12:45 PM	**Discussion**
01:00 PM	***Lunch break***

02:00 PM	**Plenary Session : Presentation of Group-2**
02:15 PM	**Discussion**
02:30 PM	**Plenary Session : Presentation of Group-3**
02:45 PM	**Discussion**
03:00 PM	***Tea break***
03:15 PM	**Plenary Session : Presentation of Group-4**
03:30 PM	**Discussion**
03:45 PM	**Concluding Remarks from the participants and NRI/CODEC/UoC**
04:15 PM	**Comments by the Session President**
04:30 PM	**Closure**

Dr. Mohammed Fashiul Alam, Professor of Management, Chittagong University, Chittagong, Bangladesh will preside over the Workshop sessions.

Workshop Schedule
(Rescheduled on 25th July 2002)

CONSULTATION WORKSHOP ON "FISH DISTRIBUTION FROM COASTAL COMMUNITIES – MARKET AND CREDIT ACCESS ISSUES"

25th July 2002

Sponsored by the UK Department For International Development (DFID)

Venue: Conference Hall, Bangladesh YWCA Bhaban, Mohammadpur, Dhaka, Bangladesh

10am – 1pm

Registration

Introduction by Mr Ansen Ward of IMM Ltd, UK

Opening of Workshop by the Honourable Chairman

Introduction of Participants, 5 minutes

Presentation by Dr. Khursid Alam, Community Development Centre (CODEC), Chittagong, Bangladesh, 10 – 15 minutes

Presentation by Dr. Iftekhar Uddin Chowdhury, Professor of the Sociology Department, University of Chittagong (UoC), 10 – 15 minutes

Presentation by Dr. Md. Solaiman, Professor of the Marketing Department, University of Chittagong (UoC), 10 – 15 minutes

Presentation by Mr. Ulrich K. Kleih, NRI (Natural Resources Institute), University of Greenwich, UK : Summary of Findings of Research Project "Fish Distribution from Coastal Communities – Marketing of Marine Fish and Credit Access Issues", 25 – 30 minutes

Tea break, 11.30

Discussion

Closure of Workshop, 1pm

Lunch, 1 – 2pm

APPENDIX 3

Invitation Letter and Cards

Natural Resources Institute

Community Development Centre (CODEC)

COMMUNITY DEVELOPMENT CENTRE (CODEC)
&
NATURAL RESOURCES INSTITUTE (NRI)

Cordially invite you to a Consultation Workshop on presentation of findings of the Research Project on

Fish Distribution from Coastal Communities–Market and Credit Access Issues,

executed by NRI (of the University of Greenwich, UK), CODEC, and the Sociology & Marketing Departments of the Chittagong University and funded by the UK Department for International Development (DFID), to be held on 22nd & 23rd July 2002 (10:00 AM to 5:00 PM) at the Conference Hall of Silver Spoon, Sattar Chamber, 99 Agrabad Commercial Area, Chittagong to discuss about the findings of the research project to enhance its usefulness. We take great pleasure in inviting you to this consultation workshop in order to jointly prioritise policy recommendations benefiting the poor in coastal fishing communities.

Please confirm your participation at the workshop before 20th July 2002 by phone (88-031-671405, 88-031-670663), fax (88-031-672154), or e-mail (khursid@spnetctg.com, dastidar@bttb.net.bd, codecprg@spnetctg.com).

We look forward to your participation in the consultation workshop.

Ulrich Kleih
Team Leader of the Project
NRI, University of Greenwich, UK.

Khursid Alam, PhD.
Executive Director
CODEC, Chittagong, Bangladesh

Natural Resources Institute

Community Development Centre (CODEC)

COMMUNITY DEVELOPMENT CENTRE (CODEC)
&
NATURAL RESOURCES INSTITUTE (NRI)

Cordially invite you to a Consultation Workshop on presentation of findings of the Research Project on

Fish Distribution from Coastal Communities–Market and Credit Access Issues,

executed by NRI (of the University of Greenwich, UK), CODEC, and the Sociology & Marketing Departments of the Chittagong University and funded by the UK Department for International Development (DFID), to be held on 22nd & 23rd July 2002 (10:00 AM to 5:00 PM) at the Conference Hall of Silver Spoon, Sattar Chamber, 99 Agrabad Commercial Area, Chittagong to discuss about the findings of the research project to enhance its usefulness. We take great pleasure in inviting you to this consultation workshop in order to jointly prioritise policy recommendations benefiting the poor in coastal fishing communities.

Please confirm your participation at the workshop before 20th July 2002 by phone (88-031-671405, 88-031-670663), fax (88-031-672154), or e-mail (khursid@spnetctg.com, dastidar@bttb.net.bd, codecprg@spnetctg.com).

We look forward to your participation in the consultation workshop.

Ulrich Kleih
Team Leader of the Project
NRI, University of Greenwich, UK.

Khursid Alam, PhD.
Executive Director
CODEC, Chittagong, Bangladesh

Workshop on Presentation of Findings of the Research Project on "Fish Distribution from Coastal Communities – Market and Credit Access Issues"

CODEC (Community Development Centre), NRI (Natural Resources Institute, University of Greenwich, UK) and the Sociology & Marketing Departments of the Chittagong University are managing a research project titled, **"Fish Distribution from Coastal Communities – Market and Credit Access Issues"**, which is funded by the UK Department for International Development (DFID). Field studies for the project were conducted in five coastal districts of Bangladesh.

The research was based on the hypothesis that coastal fishing communities in Bangladesh and the poor market participants are loosing out in the fish distribution chain and suffer from lack of access to credit sources. This was considered to result in a number of livelihood constraints, including low human, financial, and social capital base, and high exposure to seasonal and economic vulnerability. At the same time, there was a lack of information concerning the functioning of the commodity system and possible market inefficiencies such as exploitative practices. The project attempts to provide, an improved understanding of the trading and credit system for fish produced in poor coastal communities, a validated methodology integrating market and credit analysis techniques with a livelihoods approach in a post-harvest fisheries context, and policy recommendations benefiting the poor in coastal fishing communities and the fish distribution chain in Bangladesh.

By improving the understanding of market and credit issues in the distribution chain of fish produced in coastal areas of Bangladesh, and the resulting policy recommendations, it is expected that in the medium to long-term the project will help to improve the livelihoods of poor operators in the commodity system. In particular, better understanding of the institutional context and relevant policy implementation ought to reduce the marginalisation of poor producers, traders, and processors. Involvement of key stakeholders such as GoB Departments, NGOs, private sector, and donor agencies, at different project stages is expected to facilitate uptake of project outputs.