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Fish Distribution from Coastal Communities in Bangladesh – Market and Credit Access Issues

Final Technical Report

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Post-Harvest Fisheries Research Programme – Project R7969

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Abbreviations

ADB	Asian Development Bank
BCAS	Bangladesh Centre for Advanced Studies
BFRI	Bangladesh Fisheries Research Institute
BOBP	Bay of Bengal Programme
CBO	Community Based Organisation
CODEC	Community Development Centre, Chittagong, Bangladesh
COFCON	Coastal Fisherfolk Community Network, Bangladesh
DANIDA	Danish International Development Agency
DFID	UK Department for International Development
GoB	Government of Bangladesh
MoFL	Ministry of Fisheries and Livestock, GoB
DoF	Department of Fisheries, GoB
ICLARM	International Centre for Living Aquatic Resources Management
IGAs	Income Generating Activities
IMM	Integrated Marine Management Ltd.
MES	Meghna Estuary Study
MFI	Micro-Finance Institution
NGO	Non-Governmental Organisation
NRI	Natural Resources Institute, University of Greenwich, UK
PHFRP	DFID Post-Harvest Fisheries Research Programme
PRA	Participatory Rural Appraisal
RMA	Rapid Market Assessment
SUFER	Support for University Fisheries Education and Research, DFID funded project based in Dhaka, Bangladesh
UoC	University of Chittagong, Bangladesh
SL	Sustainable Livelihoods
VO	Village Organisation

Glossary

<i>Arat</i>	Generally an office, a store, or a warehouse in a market place from which an <i>aratdar</i> conducts his business.
<i>Aratdar</i>	Main actor in the fish distribution system; either acts as wholesaler or commission agent, or covers both functions at the same time; carries out public auctions, and is the main provider of credit in the marketing chain.
<i>Bahaddar</i>	Owner of fishing boat.
<i>Bazaar</i>	Market
<i>Bepari</i>	Middleman in the marketing chain who transports the fish to other Districts; use of term depends on the location; sometimes also used synonymously with retailer.
<i>Chalani</i>	Same as <i>bepari</i>
<i>Crore</i>	Ten million.
<i>Dadan</i>	Loan as part of interlocked credit-marketing transactions, whereby, traditionally, the loanee has to sell to/ through the loan provider at a discounted price.
<i>Dadandar</i>	Provider of <i>dadan</i> loan; traditionally acts as moneylender cum trader.
<i>Faria</i>	Local itinerant fish trader.
<i>Lakh</i>	One hundred thousand.
<i>Hat</i>	(Small) market place where market exchanges are carried out either once, twice, or thrice a week, however not every day.
<i>Jaal</i>	Fishing net (note there is a large number of different types of nets, as described in the text)
<i>Mahajan</i>	Traditional moneylender
<i>Mahji</i>	Captain of boat.
<i>Mokam</i>	Markets; important fish markets in district capitals are often referred to as Head <i>Mokam</i> .
<i>Nickarie</i>	Local retailer
<i>Paiker</i>	Middleman in the fish marketing chain; often covers the assembly function in the chain, acting as <i>dadandar</i> at the same time; depending on the location sometimes also referred to as wholesaler or retailer.

Exchange Rates (July 2002)

1 Pound Sterling (£) = 89.69 Taka (Tk)

1 US Dollar (\$) = 57.32 Taka (Tk)

Executive Summary

This report is an output of the research project “**Fish Distribution from Coastal Communities – Credit and Market Access Issues**”, which started in February 2001 with funding from the DFID Post-harvest Fisheries Research Programme (PHFRP). The main project collaborators included:

- Natural Resources Institute (NRI), University of Greenwich,
- Community Development Centre (CODEC), Chittagong, and the
- University of Chittagong (UoC) Marketing and Sociology Departments.

NRI’s and CODEC’s activities were funded by the DFID Post-harvest Fisheries Research Programme (PHFRP), whereas the University of Chittagong obtained funding from the Dhaka based and DFID supported SUFER project (Support for University Fisheries Education and Research).

The objectives of the study were to analyse:

- Household livelihoods in coastal communities
- The marine fish marketing system,
- Credit access for poor fishermen and traders, and
- The institutional, social, cultural and political context in coastal fishing villages.

Following an inception workshop in Chittagong in March 2001, field research was mainly carried out between July 2001 and April 2002. Two consultation workshops were held in July 2002 in Dhaka and Chittagong, where project findings were presented to stakeholders from the fishing communities, the trading sector, the Government of Bangladesh, NGOs, and members of the donor community.

The fieldwork by CODEC and NRI was based on Participatory Rural Appraisals and Rapid Market Assessments, whilst the University of Chittagong conducted questionnaire surveys. A combination of Sustainable Livelihoods Approach and marketing economics was used for analytical purposes. It is recommended that this report be read in conjunction with the main project outputs, which are presented in separate volumes.

Factors that cause poverty in the communities include, declining fish catches, lack of security (mainly in the fishing grounds due to piracy), natural disasters such as cyclones or floods, lack of capital, lack of employment opportunities, and lack of health and education /skills. Landless households, widows or divorced women, households with either no children or large numbers of children (i.e. especially girls, who will require dowry to get married), and families without regular income represent the most vulnerable households.

Both fishermen and traders state declining fish supplies and piracy in the sea and on the rivers as their main problems. Some stakeholders such as wholesalers 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).

In addition to the demand for seafood products in overseas markets, there are exports of certain marine fish species (e.g. *hilsha*, jewfish) to India, Hong Kong and other countries. 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 practices (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 margins appear 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 to the processing industry receive low prices for their fish when there is a glut in the main season especially in the more remote areas. The contradiction between marketing efficiency and equity will remain at the retailer level. On the one hand, many retailers and vendors including women (i.e. 10 – 20% of retail traders are estimated to be female) 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 will have to bear this cost.

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. In particular, lower informal interest rates have been observed where NGOs are active with micro-finance programmes.

The production and marketing of dried fish will see changes. Although dried fish processing and trading will still provide employment for large numbers of people in the foreseeable future, in the long-term it is expected that less fish will be processed, even in remote areas, as a result of factors such as declining catches, increased demand for fresh fish, better transport links, and improved means of preservation (e.g. ice supply). 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.

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

In sum, the research results provide:

- An improved understanding of the trading and credit system, and poverty in coastal fishing communities,
- A methodology integrating market and credit analysis techniques with a livelihoods approach, and,
- Policy recommendations which, amongst others, have been disseminated to:
 - The Bangladesh Fisheries Futures Review team through interactions by NRI, CODEC, and UoC;
 - The Minister and Secretary of the Ministry of Fisheries and Livestock, by CODEC;
 - Dialogue Series of the Programme Development Office of the Integrated Coastal Zone Management in Dhaka, through CODEC.

Background

Coastal fishing communities in Bangladesh and poor market participants were considered to lose out in the fish distribution chain and to suffer from lack of access to credit sources. This was thought 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.

A literature search indicated that studies have been carried out during the 1980s and 1990s with regard to fish marketing in coastal Bangladesh and related credit access issues. However, it appeared that this research has been fragmented with regard to approaches and location, and a coherent overall picture was missing.

The demand for the research was expressed in the PHFRP research call papers of September 2000, which were based on an assessment of research needs by Stirrat et al (August 2000). In addition, personal communication with NGOs (e.g. CODEC, CARE, and COFCON), and DFID Bangladesh (pers. Comm.. D King) expressed interest in this research project and potential outputs.

The project outputs were designed to include:

- 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.

Following a stakeholder workshop in Chittagong in January 2001, the project “Fish Distribution from Coastal Communities – Market and Credit Access Issues” started in February 2001 with funding from the DFID Post-harvest Fisheries Research Programme.

The main collaborators included:

- Natural Resources Institute (NRI, University of Greenwich),
- The NGO Community Development Centre (CODEC, Chittagong based), 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 started to be funded in the second half of 2001 by the DFID Support for University Fisheries Education and Research (SUFER) project.

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 questionnaire surveys, the results of which were published as separate papers as part of the proceedings of the consultation workshops of July 2002. It is recommended that the present report be read in conjunction with the main project outputs listed below, which contain the detailed research findings.

The survey activities took mainly 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, and consultation workshops took place in Chittagong and Dhaka in July 2002.

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. Also, the research concentrated on the traditional and semi-traditional sub-sectors of the marine fishing industry in Bangladesh. Nevertheless, some aspects of the large-scale commercial sector have been highlighted.

Project Purpose

The overall purpose of the project, as stated in its Logical Framework, was to contribute to the development of “Strategies and management systems to improve post-harvest utilisation of fish and its impact on the lives of poor processors, traders and consumers”.

In light of the project’s background, this encompassed the investigation of the following areas:

Analysis of the livelihoods systems of fishing communities, starting with an analysis 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, 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. In addition, the work looked beyond the fisheries sector for broader micro-financing lessons and related institutional arrangements.

Research Activities

A Sustainable Livelihoods (SL) 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, and policies, institutions, and processes. Elements of Sub-Sector Analysis were combined with the SL approach in mapping and analysing the linkages between different operators in the commodity chain and information related to their livelihoods.

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** village), Cox's Bazaar (**Hatkholapara**), Bagerhat (**Debraj**), Patuakhali (**Kuakata-Panjupara**, and **Lebukhali**), and Satkhira (i.e. **Kulla**) Districts, which were selected from the 1968 FAO census of coastal villages in Bangladesh using stratified random sampling. The following stratification criteria were used:

- Religious criteria (i.e. balance of Muslim and Hindu fishing communities);
- Location (i.e. balance between villages with direct access to the Bay of Bengal and those further inland next to rivers);
- NGO Interventions (i.e. at the outset it was envisaged to have three villages with NGO intervention, and three villages without intervention; although in the end it turned out that two of the villages supposedly without NGO presence also benefited from some form of intervention).

In addition, assembling, wholesale and retail markets in the urban areas of Chittagong, Cox's Bazar, Dhaka, Patuakhali, Alipur / Mohipur, and Satkhira were visited. 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.

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 for the dissemination of results. 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, were held in July 2002 in Chittagong and Dhaka in order to present research findings, develop policy recommendations, and validate the methodology used.

The survey activities mainly took place in July – September 2001, January – February 2002, and April 2002, involving participatory, qualitative and quantitative survey methods. In particular, the following techniques were used:

- Participatory Rural Appraisal (PRA), using tools such as semi-structured interviewing, wealth ranking, mapping, and transect walks.
- Rapid Market Appraisal, using tools such as semi-structured interviewing, and participatory mapping of commodity chains.

In addition, questionnaire surveys were conducted by the University of Chittagong on this topics with funding from the Dhaka based DFID-SUFER project. This involved a training course by specialists in quantitative surveys (i.e. Statisticians) which was organised at the CODEC training centre for the UoC team in July 2001. The reports and papers subsequently produced by the UoC team include the following:

- Chowdhury, Iftekhar Uddin (July 2002), Institutional and Socio-Political Context of Coastal Fishing Communities in Bangladesh, Sociology Department, University of Chittagong.
- Solaiman Md (October 2002), Fishing Communities: Credit and Gender Issues, Marketing Department, University of Chittagong.
- Nurul Kareem A.N.M. (October 2002) Fish Marketing System from Coastal Areas of Bangladesh, Marketing Department, University of Chittagong.

Outputs

The following provides a summary of the key findings of the project. At the same time, it is recommended that this report be read in conjunction with the main project outputs which contain the detailed research results. Table 1 describes the setting of the six communities where the surveys took place.

Table 1: Setting of the Six Survey Villages

	Latifpur	Hatkholapara	Kuakata Panjupara	Lebukhali	Debraj	Kulla
Administrative Setting: District Upazilla Union	Chittagong Sitakunda Selimpur	Cox's Bazaar Sadar Khurushkul	Paruakhali Kalapara Lata Chapli	Patuakhali Dumki Lebukhali	Bagerhat Morelgonj Panchakaran	Satkhira Ashashuni Kulla
Fishing households (#)	101	110	194	74	170	85
Religious Background	Hindu, next to larger Muslim community	Predominantly Muslim	Predominantly Muslim	Predominantly Muslim	Predominantly Muslim	Predominantly Hindu
Physical Setting	Open access to the Bay of Bengal	Indirect access through river to close-by Bay	Open access to the Bay of Bengal	Riverine Village, access to Bay of Bengal via river Paira	Riverine village, no direct access to Bay of Bengal	Riverine village, no direct access to Bay of Bengal
Type of fishing boats used	Small Motorised Boats, i.e. 10 – 20hp	Medium-sized motorised Boats, up to 70 hp	Mix of small non-motorised and motorised boats	Small dingi boats, non-motorised	Small dingi boats, non-motorised	Small dingi boats, non-motorised

Access to fishery resources in the sea and the river is the traditional livelihoods asset of households in a coastal fishing community in Bangladesh. This is complemented by gear such as boats and nets. Other assets include land and means of agricultural production, transport, health, education and financial resources in the form of savings, cash, or credit.

Different wealth categories exist within the fishing villages (Table 2). According to the villagers' own judgement, the proportion of the poor (i.e. moderate poor to very poor) within the fishing communities is of the order of 50 – 70% in the communities where the research took place. However, it has been observed that the number of households belonging to the hardcore poor is relatively less in villages which have direct access to the open sea. This may be related to the development of nearby tourist spots, and the availability of shrimp seeds and other less valued species in the adjacent Bay of Bengal.

Table 2: Summary of Wealth Ranking Exercises

	Latifpur	Hatkholapara	Kuakata Panjupara	Lebukhali	Debraj	Kulla
Wealth categories according to villagers, and number of households (HH) per category	Big (<i>bara</i>) / Rich: 12 Middle (<i>Majhari</i>): 40 Small (<i>choto</i>) / poor: 49 Total HH: 101	Rich: 3 Moderately rich: 17 Middle class: 19 Moderate poor: 62 Poor: 9 Total HH: 110	Rich (<i>Dhani</i>): 8 Middle class (<i>Majari</i>): 50 Moderate poor (<i>Motamuti Sachaal</i>): 92 Poor: 44 Total HH: 194	Rich (<i>Sachaal</i>): 23 Middle class (<i>Samannya garib</i>): 7 Middle poor (<i>Modhya garib</i>): 11 Poor: 11 Very Poor: 22 Total HH: 74	Rich (<i>Mohajan</i>): 6 Middle class (<i>Madhyam gerostha</i>): 13 Well off (<i>Sachaal</i>): 41 Poor: 49 Very poor: 61 Total HH: 170	Rich (<i>Sachaal</i>): 13 Middle class (<i>Majari</i>): 17 Poor 55 Total HH: 85
Proportion of Moderate Poor to Very Poor	49%	65%	70%	59%	65%	65%

Table 3: Monthly Income of Women headed Fisherfolk Families

Income ('000 Tk)	Frequency of Responses in Percent
Less than 2	13.33
2 – 3	17.33
3 – 4	28
4 – 5	12.67
5 – 8	18
8 and above	10.67
Total	100

Source: Solaiman, 2002; NB. Total number of respondents: 300

Table 3 shows the distribution of the monthly income of women headed fisherfolk families (Solaiman, 2002). It indicates that approximately 69% of the households have a monthly income of less than Tk4,000. According to Chowdhury (2002), the average household size is 5.6 family members in the communities surveyed.

Landless households, widows or divorced women, households with either no children or large numbers of children (i.e. especially girls, who will require dowry to get married), and families without regular income represent the most vulnerable households.

Factors that cause poverty in the communities include, declining fish catches, lack of security (mainly in the fishing grounds due to piracy), natural disasters such as cyclones or floods, lack of capital, lack of employment opportunities, and lack of health and education /skills.

According to the PRAs, both fishermen and traders state declining fish supplies and piracy in the sea and on the rivers as their main problems. According to Chowdhury (2002) 53% of the respondents in the fishing communities replied that they have experienced piracy in the sea. Some stakeholders such as *aratdars* (i.e. wholesalers / commission agents) 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 to the extent that traders and moneylenders will pull out of affected locations. This will most likely result in a less efficient marketing system in that trading competition will decrease.

Table 4 portrays the problems of fish marketing from coastal areas according to Nurul Kareem (2002). Lack of credit access, limited number of NGOs, exploitation through the *dadandar* (informal credit) system, and lack of adequate marketing information figure highest amongst the constraints identified in the questionnaire survey.

Table 4: Problems for Fish Marketing from Coastal Areas

Problems	Frequency of Responses in Percent
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 fish	71
Presence of limited number of NGOs in study areas	100
Manipulation of the middlemen at the different stages of the distribution chain	60

Source: Nurul Kareem (2002); NB. Total percentage exceeds 100% as multiple answers were possible.

In addition to the demand for seafood products in overseas markets, there are exports of certain marine fish species (e.g. *hilsha*, jewfish) to India, Hong Kong and other countries. 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 practices (including reduction of chemical use in dried fish processing), and better exploitation of export opportunities.

Overall, despite the constraints indicated, the marine fish marketing system is quite efficient in that physical and qualitative losses are small. The marketing margins appear reasonable given the highly perishable nature of the product. In particular, this applies to the fresh marine fish commodity chain where the marketing margin was calculated to be of the order of 50% between landing sites in the Chittagong area and consumption centres in Dhaka. 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%, and retail marketing 21%. For shorter marketing chains (i.e. where the distance between fish catching and consumption is shorter, both in geographical terms and the number of players involved), the fishermen's share in the consumer price is estimated to be of the order of 60%. These figures have been calculated without taking *dadan* (i.e. informal credit) arrangements into consideration. If a fisherman has obtained *dadan*, then he has to sell his catch at a reduced price (i.e. generally at a 20 – 40% discount) to the loan provider who traditionally tends to be a fish trader at the same time.

Some of the fish traders will be squeezed out of business; e.g. there will be more concentration at wholesaler level. The contradiction between marketing efficiency and equity will remain at the retailer level. On the one hand, many retailers and vendors including women (i.e. 10 – 20% of retail traders are estimated to be female) 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 will have to bear this cost.

Table 5 demonstrates the different aspects of *dadan* lending in the fish marketing chain. It is obvious that there are both positive and negative sides to this business, which need to be considered when planning new interventions geared at improving fisherfolk's access to credit. A credit programme that does not fully take into account the roles of the *aratdars*, who are at the centre of the commodity chain, may run into difficulties due to the market power the latter are able to wield.

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, and new forms of moneylenders are appearing in the trade. In particular, lower informal interest rates have been observed where NGOs are active with micro-finance programmes. Also, it needs to be borne in mind that the current *dadan* based credit system

was the driving force behind the development of the coastal fisheries sector during the last two decades.

Table 5: Positive and Negative Sides of *Dadan* in Fish Marketing

Pros	Cons
<ul style="list-style-type: none"> • The fish catching and marketing system would not be as efficient as it is without the substantial amounts of credit injected by <i>aratdars</i>. 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 <i>dadan</i> relationships between traders tend to be built on trust, which again reduces transaction costs. • <i>Aratdars</i> 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. 	<ul style="list-style-type: none"> • 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. <i>dadandars</i>) 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 <i>dadan</i> (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.

The dried fish distribution system is also efficient, however fishermen supplying to the processing industry receive low prices for their fish when there is a glut in the main season especially in the more remote areas.

The production and marketing of dried fish will see changes. Although dried fish processing and trading will still provide employment for a large number of people in the foreseeable future, in the long-term it is expected that 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.

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

Key Findings and Recommendations for Policy Implementation

The following sections provide a synthesis of the main issues arising from the study and related policy recommendations. The latter are primarily aimed at decision makers in the Government, the donor community, and the NGO and private sectors. The sections cover the more general issues related to the livelihoods of the coastal communities before dealing with specific marketing and credit related issues.

Declining catches of marine fish

Substantial increases of marine fish catches have taken place between 1975 and the early 1990s. Since then a gradual decline of catches has been observed by the fisherfolk of coastal communities and traders specialised in marine fish. However, it needs to be pointed out that the decline is not linear and that some years are better than others (e.g. 2001 was considered better than the previous years). Nevertheless, the threat of declining fish stocks is highly present in coastal communities. This environmental trend is likely to have major consequences upon the livelihoods of those concerned.

The main reasons stated for the decline in catches include:

- Overfishing, due to big commercial trawlers, increased number of boats, use of more efficient / destructive gear, etc.
- 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).

Suggestions for Policy Implementation:

- A more effective control of industrial trawling needs to be established;
- The issue of un-authorized fishing by foreign trawlers needs to be addressed at inter-governmental levels;

- In order to accommodate the needs of those leaving the sector as a result of management measures, the creation of alternative Income Generating Activities (IGAs) is required;
- Stricter pollution controls need to be imposed;
- Improved involvement of poor coastal communities in decision making regarding fisheries management is required;
- A scientific assessment of fish stocks and changes in the natural habitat is needed.

Unsatisfactory law and order situation

The current law and order situation is characterised by an increasing incidence of violence in coastal fishing communities and markets. In particular, an increase in violence was reported between 2001 and 2002.

This is reflected in the following:

- Increasing levels of piracy in the sea and on the rivers resulting in loss of gear and fish on board ; injuries and even deaths of fishing crew are becoming increasingly common;
- Extortion of money or fish from traders takes place in major markets.

Suggestions for Policy Implementation:

- The piracy in open waters needs to be arrested through deployment of Coastguard and other law- enforcing agencies;
- Community organisation and policing needs to be strengthened, with Government and NGO support; similarly, trader associations need to be strengthened (i.e. it was reported that harassment was less common when trader associations were stronger);
- Advocacy activities by press, NGOs, and local communities need to be encouraged.

Lack of Credit Access

Lack of financial resources and related issues have figured highly amongst the livelihoods constraints expressed by communities. This is in spite of NGO micro-finance interventions in the majority of villages, and, in some cases, a lowering of informal interest rates as a result of this.

The key issues of micro-finance can be summarised as follows:

- The hardcore poor (estimated at 20% of coastal population) do not have access to formal or informal credit;
- The currently existing micro-finance schemes are often not appropriate for coastal communities;
- The opportunity cost of capital is very high in the informal sector (e.g. 5 – 15% interest per month); this is also reflected in *dadan* transactions;
- Even larger-scale operators in the commodity chain (e.g. *aratdars*) do not have easy access to bank credits, as a result of requirements imposed by banks.

Suggestions for Policy Implementation:

- A coherent policy needs to be formulated for micro-finance institutions (e.g. lending framework);

- The creation of a special bank / financial institution that can address the needs of the coastal communities is recommended;
- A review and redesign of micro-credit products for coastal communities is needed; more emphasis, in this regard, needs to be placed on savings;
- It is suggested that lending by NGOs takes place against productive purposes on flexible terms reflecting local conditions (e.g. risk, seasonality, amount of loan required, income streams).

Governance related Issues

Many of the issues raised by fishing communities and other stakeholders are of an institutional nature originating in weak governance.

The current situation is as follows:

- There is weak local governance due to lack of clear policies and inadequate autonomy of local government;
- The government extension services related to key sectors such as fisheries, agriculture, and health and education, are inadequate;
- Government policies are characterised by:
 - Inadequate addressing of poverty;
 - Poor implementation;
 - Coastal areas have weak representation at Central Government level.

Suggestions for Policy Implementation:

- The formulation of policies and implementation thereof needs to be improved;
- A review and strengthening of the extension system is required. For example, better accountability of services to the communities needs to be introduced, and community based organisations (CBOs) should become increasingly involved in the delivery of extension services;
- The Government should be more participatory, representative, and poverty focussed, as far as coastal areas are concerned;

Environmental degradation in coastal areas

The majority of areas studied suffer from severe environmental degradation. This is in addition to declining fish stock.

The situation can be summarised as follows:

- The coastal belt is very vulnerable to natural disasters such as cyclones and floods;
- Erosion, in particular in riverine areas, aggravates this situation, leading to deteriorating socio-economic phenomena such as migration etc.
- Forest resources are declining, including in the Sundarbans;

Suggestions for Policy Implementation:

- Continuing efforts in disaster management, including awareness raising, are required;
- A community based land reclamation project is recommended;

- Effective river management (e.g. tracing, fortification of river banks) needs to be put in place;
- Reforestation, including mangrove forests, needs to be encouraged;
- A fair distribution of *khas* / *char* land to the poor needs to be implemented; priority should be given to people whose land and homesteads on the river banks has been eroded.

Lack of alternative Income Generating Activities (IGAs)

Although there is also some inward migration in coastal areas by poor people from other parts of the country who are in search of “common pool resources”, there is a substantial amount of outward migration by coastal dwellers into the big cities. This is largely related to lack of employment opportunities and services in the coastal belt.

The current situation can be summarised as follows:

- Due to declining fisheries resources people require alternative Income Generating Activities (IGAs); in order to reduce the migration to the big cities.

Suggestions for Policy Implementation:

- Study for identification of alternative IGAs, and action-research projects by Government and NGOs are required;
- Improvement of infrastructure such as roads, ferry crossings, and electricity supply, needs to remain a Government priority;
- The skill base of the coastal population needs to be enhanced through related projects. As far as the youths are concerned, a balance between academic and vocational subjects is important;
- Linkages with markets need to be established; NGOs can play a facilitatory role in this respect;
- A more pro-business environment needs to be created, in particular at District level. Appropriate business development services need to be put in place.

Lack of Community Organisation

Despite NGO run community development projects, there is still a lack of community organisation in coastal villages. In particular, the poor lack access to organisations that may exist.

The current situation can be described as follows:

- Fishing communities are better organised in relation to issues such as health or micro-finance, however lack exposure to community marketing skills;
- There is a 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). In particular, this also includes information related to alternative IGAs.

Suggestions for Policy Implementation:

- More efforts are required with regard to the strengthening of community organisation, and better inclusion of the poor;
- Pilot testing of marketing by community based organisations (CBOs) should be encouraged, however this ought to be backed with adequate financial and institutional support. In addition to fisheries related enterprises, these activities should also be geared towards sectors with a potential for alternative IGAs.
- The dissemination of information on markets and other aspects of daily life in fishing communities should be improved through Coastal FM Radio Stations cum Information Centres, and other media (e.g. residential training, videos, newsletters).

At the same time it is important to take into account the lessons learnt with similar initiatives in other parts of South Asia. For example, Gordon (1997) highlights some requirements of successful fish marketing by a fishermen's group in Tamil Nadu. The key points include: Strength of purpose and cohesion within the group, including strong leadership; sound business management; thorough training activities; learning the marketing process before large investments are made; good communication facilities; and contact with other organisations working with fishing communities.

Lack of Infrastructure

Despite improvements of the infrastructure related to transport, electricity, etc. during the 1990s, substantial efforts will still be required during the decades to come.

The main survey findings related to marketing of marine fish can be summarised as follows:

- Markets often lack basic infrastructure such as ceiling, flooring, water supplies, drainage, latrines, etc.
- Remote areas of the country still face accessibility problems;
- In some cities it is difficult to access major wholesale markets due to inadequate and congested roads;
- Landing centres at community level are unhygienic but efficient.

Suggestions for Policy Implementation:

- Up-grading of market infrastructure is required, including drainage, water supply, roofing, latrines, market access, etc.
- Besides Government initiatives, infrastructure up-grading may take place through the private sector,
- Construction of low-cost cold storage facilities is recommended. This may require incentives for private investors in the form of reduced interest rates from Government banks.
- Continued efforts are required to improve the transport system, i.e. feeder and community access roads, ferry crossings, etc;
- Landing centres should be up-graded through local government and community initiatives.

Inadequate post-harvest handling, including the supply of ice

Although fish moves relatively fast through the marketing chain, and only small physical or qualitative losses could be observed, there is still substantial scope for improvement

The key issues related to fish quality can be summarised as follows:

- Handling of fish on landing centres and in markets is often unhygienic;
- There is oversupply of ice in some areas and under-supply in other parts of the country;
- Insufficient amounts of ice are often used between catching and landing of fish;

Suggestions for Policy Implementation:

- 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 (this will only happen if they see benefits in using more ice most likely as a result of raising awareness as above);
- Identification and promotion of alternative uses of ice.

Unexploited Potential for Dry Fish Exports

Despite declining availability of dried fish on the local market, it was highlighted that there is an unexploited potential for dry fish exports to overseas markets. Better exploitation of this potential through value-added activities could provide income for coastal communities.

Summary of the situation:

- There are already exports of dried fish to a limited extent to markets in the Middle East, Far East, UK and US;
- Traders complain about a lack of exportable supply of dried fish, which is mainly due to poor quality.

Suggestions for Policy Implementation:

- 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 Bureau.

Use of Pesticides in Dry Fish Processing

The issue of pesticide use in the dry fish commodity chain can be summarised as follows:

- Although it is generally not acknowledged by traders and processors alike, there is evidence that pesticides are being used in dry fish processing, e.g. *Nogos*, *Basudine*, *Gamoxin*, DDT .

Suggestions for Policy Implementation:

- Awareness raising is required at consumer, processor, and trader levels; care is required to avoid loss of livelihoods of poor people;
- Identification and provision of safe alternative means of controlling insect infestations (e.g. use of natural insecticides and predators; better handling and processing practices). There are potential links here to other research currently funded by the DFID Post-Harvest Fisheries Research Programme in India.

Contribution of Outputs

The following reports and papers were produced by the project:

Ulrich Kleih, Khursid Alam, Ranajit Dastidar, Nicolienne Oudwater, and Ansen Ward (2001) Report of Project Inception Workshop on “Poverty Alleviation and Livelihood Security Among the Coastal Fishing Communities – Market and Credit Access Issues”, Chittagong, 27-28 March 2001; NRI and CODEC.

Ulrich Kleih, Khursid Alam, Ranajit Dastidar, Utpal Dutta, Mohammed Solaiman, Iftekhar Uddin Chowdhury, A.N.M Nurul Kareem, and Ansen Ward (2002) Report of Consultation Workshops on “Fish Distribution from Coastal Communities – Market and Credit Access Issues”, 22 – 23 July 2002 in Chittagong, and 25 July 2002 in Dhaka. The papers presented at the workshops include:

- How Sustainable are Livelihoods in the Coastal Fishing Communities? Findings from a Participatory Rural Appraisal, by Ranajit Dastidar and Utpal Dutta, CODEC;
- Institutional Issues & Credit: The NGO Experience in Coastal Communities from CODEC’s Perspective, by Khursid Alam Ph.D, CODEC;
- Marketing of Marine Fish – Results of Rapid Market Appraisal Exercises, by Ulrich Kleih, NRI, and Utpal Dutta, CODEC;
- Observations on Aspects of the Marine Post-Harvest Fishery Sector of Bangladesh, by Ansen Ward, IMM LTD;
- Methodology to Analyse the Distribution System of Fish from Coastal Communities in Bangladesh, Focussing on Market and Credit Access Issues; by Ulrich Kleih, NRI
- Fishing Communities: Credit and Gender Issues, by Mohammed Solaiman PhD, Department of Marketing, University of Chittagong
- Fish Marketing System from Coastal Areas of Bangladesh, by Professor A.N.M. Nurul Kareem, Department of Marketing, University of Chittagong
- Institutional and Socio-political Context of Coastal Fishing Communities in Bangladesh, by Iftekhar Uddin Chowdhury PhD, Department of Sociology, University of Chittagong.

Ulrich Kleih, Khursid Alam, Ranajit Dastidar, Utpal Dutta, Nicolienne Oudwater, and Ansen Ward (February 2003); Livelihoods in Coastal Fishing Communities, and the Marine Fish Marketing System of Bangladesh - Synthesis of Participatory Rural Appraisals in Six Villages, and Assessment of the Marketing System; NRI and CODEC.

Improvements to the livelihoods of poor fisherfolk, traders, and processors in the marine fish distribution chain in Bangladesh are expected to take place as a consequence of a better understanding of market and credit access issues, and the resulting policy recommendations. The involvement of key stakeholders such as NGOs, GoB Departments, private sector, and donor agencies at the various stages of the project cycle has facilitated the uptake of project outputs.

The main dissemination activities involving stakeholders include the following:

- Inception Workshop, Chittagong, March 2001;
- Consultation Workshops in Chittagong and Dhaka, July 2002;
- Contributions to Bangladesh Fisheries Futures Review through interactions by NRI, CODEC, and UoC with review team;
- Handing over of summary project findings and recommendations to the Minister and Secretary of the Ministry of Fisheries and Livestock, by CODEC;
- Presentation of project findings in Dialogue Series of the Programme Development Office of the Integrated Coastal Zone Management in Dhaka, by CODEC.

In particular, the involvement of the NGO CODEC proved beneficial for the dissemination and up-take of research findings. On the one hand, given that they are the main NGO active in the coastal belt of Bangladesh, they themselves have a keen interest in the research findings, on the other hand they are key players in a number of forums where policy issues related to coastal areas and fishing are discussed.

As a consequence of the project, the University of Chittagong Marketing and Sociology Departments have developed a research interest related to areas such as coastal livelihoods, and fish marketing. Although the University has a reputation for their research in marine fisheries, this tended to be primarily of a technical nature. The DFID SUFER project (Support for University Fisheries Education and Research) was instrumental in providing financial support for the activities carried out by the University of Chittagong.

As for follow-up activities, the production of a guide on “Sub-sector analysis of marine fish distribution systems – market and credit access issues” is planned by NRI for March 2003. The guide will combine marketing systems analysis with a Sustainable Livelihoods Approach (SLA).