

Department of Social Sciences

**Common Property Rights and Indigenous Fishing Knowledge in the
Inland Openwater Fisheries of Bangladesh: The Case of the
Koibortta Fishing Community of Kishoregonj**

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**This thesis is presented as part of the requirements for the award of the Degree of
Doctor of Philosophy of the Curtin University of Technology**

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Declaration

This thesis contains no material, which has been accepted for the award of any other degree or diploma in any university.

To the best of my knowledge and belief this thesis contains no material previously published by any other person except where due acknowledgement has been made.

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ABSTRACT

Bangladesh contains one of the richest and largest inland fisheries in South Asia and the third highest inland capture fisheries in the world and has a long history, which continues to the present, of conflict and cooperation between fishers and other diverse fishing interests over access to a range of fishing environments managed under a variety of leasing and tenurial arrangements. Several fishing communities are of ancient origin and over a long period of time have developed and adapted their indigenous fishing knowledge, including technologies, fishing practices and knowledge of diverse fishing environments to manage fisheries in a variety of environmental and ecological conditions.

This thesis provides a detailed ethnographic account of one such community, the Koibortta fishers of Krishnapur village in the northeast flood plain region of Bangladesh, focusing on their management practices and indigenous fishing knowledge in selected inland common property fisheries. It examines, using documentary and oral historical sources, the ways in which they have adapted aspects of their indigenous fishing knowledge to changing economic and environmental circumstances over the past 50 years. It also examines, using case studies of three water bodies, how they were able to gain short-term and insecure access to selected water bodies, partly by drawing on traditional social networks at village and multi-village levels to mobilise fishers in negotiations with leaseholders. The thesis argues that these social networks and fishers' capacity to adapt aspects of their fishing knowledge to new circumstances were insufficient to gain long term, secure and direct access to productive water bodies as fishers lacked strong government commitment to their long term security. The thesis concludes with a discussion of the capacity of Krishnapur fishers to manage fish resources equitably and sustainably.

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GLOSSARY AND ABBREVIATIONS

Glossary of Bengali terms

Acre: 100 decimal (Eksho shotok) and 2.5 acres is equal to 1 hactre

Asraf: Upper class (of Urdu origin derived from the Arabic ‘Sharif to denote nobleman or aristocrat)

Atraf: Lower class (of Urdu origin)

Arotdar: Fish wholesale commission agent/ Fish Trader

Arot: Fish landing and wholesale trading place

Baor: Oxbow lake

Balumohol: Sand belt

Bari: House

Beel: Lake, a deeper area or pocket where water remains throughout the year or for a longer period.

Bepari: Fish trader, who buys fish from the fishers and sells to paikar through arotdar

Bhati Anchal: Wetland region/ Low- lying area, which goes under water during the monsoon

Bideshi: Foreigner

Borshi: fishing hook

Boromaach: Big fish

Chotomaach/ Guramaach: small fish

Chukti: Contract

Current Jal: Fine mesh fishing net made of monofilament synthetic fiber (illegal)

Dak: Auction/ bid

Dadondar: Moneylender

Dar-ijaradar: Sub-leaseholder

Deshi: Native/ local

Devota: Deities

Doshok: A social body of ten (*dosh*) people, generally means ward or village committee

Gotra: Line of descent or lineage

Ghor: Room

Gwati: Kin relations who comprise of both members and non-members of a lineage

Hajarkee: An informal social body of a thousand (*hajar*) people comprised of representatives of a number of cluster villages

Haor: Big depression or low-lying floodplain area in Northeast Bangladesh which is inundated during monsoon and becomes a vast sheet of water.

Hati/ Para: Ward or section of the village

Ijaradar: Leaseholder, who obtains the lease of the water body from the Government.

Jal: net

Jele/ Jailla: Fishers

Jolmohol/ Jolmohal: Section of river, individual or group of lakes, floodplains, land depressions or individual pond owned by the government but leased out for fishing. They are also called fisheries. The literal meaning of Jolmohol is water (*jol*) area (*mohal*).

Kata/Katha: Brush piles

Khas: Land (and water bodies) owned by Government, usually leased out.

Khola: Temporary administration set up on the floodplains or on the edge of the lake

Lakh/ Lac: One hundred thousand

Majhi: Boatman

Mastan: Hooligans (influential /powerful people)

Mohajon: Moneylender.

Maach Bebashayee: Fish traders

Nouka: Boat

Paikar: Small trader & retail seller

Pori-nouka: Security boat

Puja: Worship

Somity/ Samity: Association

Sarkar: Accountant/ Cashier

Sutki: Fermented fish/ Sun-dried fish

Shidal: Fermented small fish such as *Puntius* species

Sundarbans: Large mangrove forest area in southwest Bangladesh

Taka: Bangladesh Currency (60tk. =1US\$)

Upazila: Sub-district

Zamindar/Jomider: Landlord (who holds land).

Abbreviations

ADB: Asian Development Bank

ADC: Additional Deputy Commissioner

ADAB: Association of Development Agencies in Bangladesh

ASA: Association for Social Advancement

BAU: Bangladesh Agricultural University

BBS: Bangladesh Bureau of Statistics

BCAS: Bangladesh Centre for Advanced Studies

BELA: Bangladesh Environmental Lawyers Association

BFDC: Bangladesh Fisheries Development Corporation

BFRI: Bangladesh Fisheries Research Institute

BRAC: Bangladesh Rural Advancement Committee (a national NGO)

BWDB: Bangladesh Water Development Board

CARITAS: A Non-Government Organisation

CBFM: Community Based Fisheries Management

CNRS: Centre for Natural Resource Studies

CPR: Common Property Rights/ Common Pool Resources

CPFR: Common Property Fisheries Resources

DAMCO: A local NGO

DC: Deputy Commissioner

DFID: Department of International Development of United Kingdom

DFO: District Fisheries Officer

DOF: Directorate of Fisheries

FAO: Food and Agriculture Organization of the United Nations

FAP: Flood Action Plan

FCD/I: Flood Control and Drainage and Irrigation

FFP: Fourth Fisheries Project

GDP: Gross Domestic Product

GO: Government Organization

GOB: Government of Bangladesh

ICLARM: International Centre for Living Aquatic Resources Management (now named WorldFish Centre)

ICSF: International Collective in Support of Workers
IK: Indigenous Knowledge
IFK: Indigenous Fishing Knowledge
IUCN: International Union for Conservation of Nature
MFA: Marine Fisheries Academy
MFA: Ministry of Foreign Affairs
MOA: Ministry of Agriculture
MOEF: Ministry of Environment and Forestry
MOFL: Ministry of Fisheries and Livestock
MOF: Ministry of Finance
MOL: Ministry of Land
MOWR: Ministry of Water Resources
MOYS: Ministry of Youth and Sports
MUM: A local NGO
NFMP: New Fisheries Management Policy
NGO: Non-Government Organization
NRM: Natural Resource Management
NRSP: Natural Resources System Programme
POPPY: a local NGO
PROSHIKA: A major NGO (Proshikkhan, Shikkha-o-Kaj (training, education & work)
RAC: Rural Advancement Committee
SPARSO: Space Research and Remote Sensing Organization
UFO/ TFO: Upazila/ Thana Fishery Officer
UNO/ TNO: Upazila/ Thana Nirbahi Officer

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CHAPTER ONE

Introduction

1.1.Overview

This chapter discusses the main objectives of the thesis, explains the conceptual and policy issues that stimulated my research and gives a brief description of the study methods, sources of data, fieldwork experience and an outline of each chapter. The main objective of the study is to examine the role of common property rights regimes and indigenous fishing practices in the management of inland open water fisheries of Northeast Bangladesh (Mymensingh & Sylhet) with special reference to the Koibortta¹ fishing community of the village of Krishnapur, Kishoregonj District, Mymensingh Division has the highest inland open water fisheries potential in terms of the total Bangladesh inland water fish catch. The inland open water capture fisheries of Kishoregonj include a large number of rivers and estuaries, the country's second highest number of *beels* (hereafter referred to as lakes) and *haors* (hereafter referred to as land depressions) and the largest area of floodplains. According to a Department of Fisheries (DOF) 2001 report, Mymensingh contributed about 13.5% (100,666 mt) of the nation's total inland water catch (671,900 mt), of which the floodplains contributed 73,479 mt, lakes and swamps contributed 18,878 mt and rivers and canals and estuaries contributed 8309 mt (Ali, Thompson, Alam & Ahmed, 2003).

The Koibortta of Kishoregonj are the single most important professional Hindu fishing community in Bangladesh and to date have not been the subject of detailed ethnographic research. The present study fills this gap by providing new insights into one community of Koibortta inland fishers. In particular, it provides detailed ethnographic materials on the property rights, management of fisheries resources, organization of fishing and indigenous fishing practices.

1.2.Geographical and historical background

Bangladesh is geographically located between 24 00 N and 90 00 E and is situated in the region of South Asia bordering the Bay of Bengal between Burma and India (See

Figure-1 & 2). The country is a huge low-lying riverine land traversed by the many branches and tributaries of the Ganges and Brahmaputra Rivers. Most of the country is situated on deltas of large rivers flowing from the Himalayas: the Ganges unites with the Jamuna (main channel of the Brahmaputra) and later joins the Meghna to eventually empty into the Bay of Bengal. Tropical monsoons and frequent floods and cyclones inflict heavy damage in the delta region. The total area of the country is 144,000sq km, of which 133,910 sq km is land area, and the remaining 10,090 sq km is water area (CIA, 2004).

The country contains one of the richest and largest inland fisheries in South Asia. About 34 percent of the country's land area is under water almost six months each year. It has extensive river systems as well as productive coastal and marine fishing grounds (World Bank, 1998). Today, fish provides 63 percent of the total animal protein² intake of Bangladesh population, and the fisheries sector gives full-time employment to 1.2 million people, of which 0.77 million are engaged in inland capture fisheries (FAP-6, 1993). As a sector, fisheries plays an important role in generating livelihoods and providing fish food for a large number of the Bangladesh population and according to the DOF (2002) about 70 percent of its rural population undertake some sort of fishing activities around the year. The fishing industry contributes 5.9 percent to the country's national GDP (BBS, 2001) and approximately 6 to 7% of the country's' export³ income (Farooque, 1997; Nasiruddin, 2001). The main sources of fish are inland open water capture and enhanced fisheries on rivers, lakes and land depressions (inland lakes), ponds, coastal aquaculture and marine fisheries. Inland fisheries- mainly the floodplains- contributes substantially (about 38.7 percent) to the total sector production (Huq, 1998). In the past, the major source of fish production was the inland capture fisheries. During the 1960's more than 90 percent of Bangladesh's fish production still came from inland capture fisheries and the rest from aquaculture and marine fisheries.



Figure 1.1: South Asia



Figure 1.2: Bangladesh

However, during the last three to four decades the contribution of inland capture fisheries to total national production has declined. This decline has been partly due to increased production from marine fisheries but more importantly to increased production in freshwater aquaculture and to over-exploitation of the fisheries and other human impacts such as Farakka barrage⁴ and natural processes affecting floodplain resources and wetland environments (Ali et al., 2003).

The high productivity and potential of Bangladesh's inland fisheries reflect the country's vast nutrient-rich water areas, its tropical climate and the natural fertility of its land (Nasiruddin, 2001; World Bank, 1998). Bangladesh was second only to China in regard to the amount of inland capture fisheries production in 1995, and third in 2000 after China and India. Of the top ten aquaculture-producing countries in the World, Bangladesh is in ninth position. 90% of Bangladeshi fish exports⁵ are shrimp. While fish exports have been rising steadily since 1999, they currently account for only 3.3% of total production (Bennet & Mallick, 2002; FAO, 2002).

Until recently fish and rice formed the mainstay of the diet of Bengali people (except for a few tribal non-Bengali people, all Bangladeshis are Bengali), something captured in the saying: *mache-bhate-Bangali* (fish-rice-Bengali). For centuries fish has been central to the diet of Bengalis and nineteenth and early twentieth century historical sources show that between 85% and 95% of the Bengali population ate fish (Day, 1871; De, 1910; Gupta, 1908). Both Hora and Thapar hold the view that historically fish was widely used as food. Hora draws evidence from the *Arthashastra* that fish was relished as an article of diet (Hora, 1948b, p.10) and Thapar talks of fish as 'an important item of diet in Mauryan times' (Thapar, 1961, p.72). From the earliest history of India, fish was not only an important food item with its various methods of preparation and uses but also had other significance in the social life and cultural practices of Bengalis. In a number of ceremonial and ritual contexts fish was used, prohibited or restricted, which Das (1931) referred to as a 'fish trait-complex'. For example, during the period of mourning, abstention from fish, eggs, meat, some kinds of pulses and onion was strictly maintained in certain castes (Das, 1931, p. 287) and there were taboos on eating Hilsa from the '...day following Bijaya Dasami

day (tenth day of the bright half of the month of Ashwin (Sept-Oct) till the next Sripanchami day (fifth day of the bright half of the month of Magh (Jan-Feb)'. Fish had significant cultural importance in marriage rituals, funerals (sraddha) and many other social and cultural practices in Bengali life. In marriage ceremonies, fish was always among the items sent for *adhibasa*, and included a pair of fishes with scales with one larger than the other. In western Bengal, fish, which were painted and coins placed inside them were sent for *gaye-halud* (body turmeric), a part of the marriage ceremony of smearing with turmeric paste (Das, 1931, p. 284).

The rich and diverse nature of the environments in Bangladesh and its location at the delta of the three great river systems of the Ganges/ Padma, Jamuna/ Brahmaputra and Meghna enabled a majority of the farming population to engage in fishing some time during the year for their subsistence (Allen, 1905; Beveridge, 1876; Buchanan-Hamilton, 1877; O'Malley, 1908; Sachse, 1917; Pokrant, 1996). The vast floodplains have supported a range of natural resource based options to sustain the livelihoods of the rural population.

In present-day Bangladesh, most fish is consumed domestically and forms a vital source of food and micronutrients for its population (Alam, 2003). But in recent years a growing demand for fish in local and global markets is causing an imbalance in resource exploitation and decline in local consumption, especially among the less-well off. Many fish species such as the larger carp, catfish and hilsha and some smaller local species previously eaten by the poor, including many fishers, are now too expensive for their own consumption and are increasingly consumed by middle and upper class urban and rural populations. In addition, there is a growing overseas demand among expatriate Bangladeshis for certain species which has also contributed to a rise in their price. Traditional fishing is also experiencing an increasing influx of people from other sectors (including farming), despite the risky nature of the sector, which is creating greater poverty and vulnerability for traditional/ artisanal fishing communities such as the Koibortta. The increasing price of fish in local and international markets combined with intensified fishing activity has meant that many fishers are either forced to consume less-valued species or not eat fish at all (see chapter five). This is compounded by a lack of alternative employment possibilities in the wider economy.

Fishing peoples usually live close to rivers, land depressions and oxbow lakes, have a low standard of living and fishing is regarded as a low status occupation in the wider community. In general, fishing activities are organized on a small-scale basis and fishers are linked to the wider economy through an extensive marketing system largely controlled by non-fisher middlemen. Fishing people are often the victims of floods, storms, cyclones and other natural calamities. In addition, they are politically and socially marginalized and economically vulnerable.

Different forms of property rights and management practices during different historical periods have had different impacts on the sustainability, livelihood and food security of the fishing community. In pre-British times, the limited evidence available suggests that local people including the traditional fishers had customary rights to fishing grounds subject to regulation by local rulers and revenue collectors (zaminders/ land lords). Prior to the Permanent Settlement Act (PSA) of 1793, fishers had to pay very nominal tolls or rent to the Government or even no tolls in some areas. After the introduction of the PSA, the former revenue collectors and local officials under the Mughals were given private property rights in most water bodies on their former tax estates, which effectively removed or seriously reduced common property rights in local water bodies. As a result of this privatisation, fishers became subject to much greater legal control by the new landowners and were increasingly required to pay more regular tolls for the right to fish in areas to which they had previously had greater access (Pokrant, Reeves, McGuire, 1996).

With the abolition of the zamindari system in 1950, the Pakistani Government became the owner of most water bodies and started private leasing, a practice that continues to the present day. The management of fisheries became the responsibility of several Governmental agencies and Ministries based on principles laid down under the British and subsequently by several Government Acts during the Pakistan period. These included the Fish Protection and Conservation Act of 1951 and the Estate Manual Act of 1958. In 1950 the Government decided to lease out access rights through auction, but this resulted in wealthy non-fishing people gaining access to the rights, and sub-leasing to the fishers continued.

After liberation in 1971 fishers' cooperatives were given sole rights to bid for the lease, provided they bid the highest price. However, this was not a foolproof system: often unable to bid the highest price, they had to go into partnership with landlords who gained control of the lease. For a variety of reasons, in 1985-6 the Ershad Government introduced the New Fisheries Management Policy (NFMP) that aimed to remove short-term leases; give more control to the fishers and to improve management and re-stocking programmes. However, short-term leasing is still common in many fishing grounds which has led to the decimation of stocks as leaseholders aimed to maximise profits during the short time available (Bennet & Mallick, 2002).

At present, a range of Government agencies are involved in fisheries management, which has resulted in unclear lines of authority and some conflicts over management objectives and appropriate practices (Rahman, 1989). Since the 1980s there have been attempts by fisher groups, sometimes under the leadership of the National Fishermen Association, to increase their control and management of selected fishing areas. However, these have not been very successful and fishers remain largely subordinate to the interests of private leaseholders, state officials, traders and a few wealthy fishers.

1.3. Main research question

There is a growing body of international research on the problems facing marine and inland small-scale fishers caused by, *inter alia*, large-scale commercial fishing, land and water degradation, increased population pressure, new forms of property rights and greater control of fishing resources by non-fisher interests. However, there has been little scholarly, particularly anthropological research on inland open capture fisheries in Bangladesh. This thesis examines the ways in which one group of inland fishers in Bangladesh, the Koibortta fishers of Krishnapur village, have adapted to changes in legal access to traditional fish resources and water bodies brought about by post-1950 state-directed policies which have shifted greater legal control of water bodies from fishers to non-fishers. It shows how Krishnapur fishers have used their local village and wider Koibortta and other fisher kin and non-kin-based networks and institutions to protect their fishing interests, have modified their fishing methods

and techniques to deal with changing legal, social and ecological circumstances and have sought to collectively manage their fishing activities within an essentially private leasing system controlled by local and outsider non-fishers such as traders, politicians, and business people. It also shows that while Krishnapur fishers have had some success in gaining limited access to fishing bodies which has helped them ensure a more equitable, if limited, distribution of fishing rights among their members, they have been less successful in gaining secure, direct and long-term legal control of such bodies, something which they regard as a necessary condition for them to manage an equitable, productive and sustainable fishery.

The study draws on anthropological and other research on property rights and indigenous knowledge, together with detailed ethnographically-based materials, to show how Krishnapur fishers have taken initiatives, not always successfully, to improve their livelihoods. In particular, it shows how fishers have been able to negotiate with largely non-fisher leaseholders to obtain limited access to privately leased water bodies covering a variety of fishing environments, namely, land depressions, lakes and sections of rivers. The discussion is framed within the discourse of property rights, particularly common property, and indigenous knowledge (IK). Provided here are brief working definitions of these concepts which will be discussed in greater detail in the following chapters.

- A **property rights** regime is a socially organized set of rules, sanctions and practices through which a property right is defined, regulated and used, and
- A **common property rights** regime is one where rights are shared by the members of a group with exclusive access to a resource.
- **Indigenous knowledge** is broadly defined as the local knowledge held by indigenous peoples or local knowledge unique to a given culture or society. In this thesis, it is used to refer particularly to indigenous knowledge of fishing and covers fishing practices, beliefs and rituals surrounding those practices and the social networks fishers use in gaining access to water bodies.

1.4. Study unit and location

The primary unit of study was a traditional Koibortta fishing community located in Krishnapur village of Bajitpur Sub-District in Kishoreganj District. In addition, the

the village was examined as part of a wider regional network of other Koibartta and non-Koibartta fishing communities located mainly in Bajitpur and adjoining sub-districts. These fishing communities fish in a variety of fishing environments such as land depressions, rivers, ox-bow lakes and ponds. It is important to note that there are no specific fishing places within Krishnapur village itself. All the fishing places (locally referred to as Jolmohals) are located around the village and beyond to which other local fishing communities also have access.

1.5. Study methods and materials

The study used a combination of ethnographic and survey techniques. Primary data were collected through extended participant observation for 12 months in two phases from February 2002 to April 2002 and July 2002 to February 2003. During this time, the author participated in many village activities and observed the activities of daily life (Fetterman, 1998; Herbert, 2000; Hamersley & Atkinson, 1983). Prolonged fieldwork and community involvement was necessary for building relationships of trust (see figure: 1.3-16).



Figure 1.3: The host family in the study village



Figure 1.4: Interviewing fishers



Figure 1.5: The researcher with a fish trader on the river



Figure 1.6: One of the key informants of the study

A range of qualitative and quantitative data collection methods were used, including formal and informal discussion and interviews, systematic observation of fishing and fish related activities, case studies of selected farmers and fisher groups, a benchmark survey (see appendix 1.1 & 1.2), detailed surveys of fishers and farmers and key informants of different ages and socio-economic background

Beside primary fieldwork data, the study also drew upon a range of published and unpublished scholarly sources, Government and official publications. The author used some official data related to national fish production, fish stock, fish catch, decline of fish production and fish export. Such sources need to be treated with caution as many researchers have questioned their accuracy. Informal discussion with former fisheries officials suggest that at times statistics on fish catches and the like are altered to serve political purposes. For example, catch statistics may be inflated to show that particular development directives have been met. The absence of a good system of governance is widely recognised as one of the main reasons for such poor statistics.

Secondary data were collected from different Bangladeshi Universities, Research Institutes, District Fisheries Departments, the Directorate of Fisheries, Bangladesh Agriculture University, Bangladesh Agriculture Research Council, National Archives, BAFRU Library of the Flood Action Plan (FAP-6 and FAP-20), different national and international development agencies/ organizations such as the World Bank, UNDP, DFID, ICLARM, IUCN, DANIDA, CARITAS, and various Fishers' Associations. In addition, the South Asia Research Unit (SARU) at Curtin University, Western Australia provided a useful source of data and information on fisheries. To gather information and data from secondary sources, a review of various fisheries reports, District Gazetteers, books, journals and other published and unpublished materials was done.

1.6. Fieldwork experience

At the initial stage of my fieldwork, the fishing people of Krishnapur treated the author as an outsider. It took several weeks to settle into village life during which time the author became familiar with the local Bangla dialect and other social and cultural practices. The author dressed in the local style, drank tea with fishers at the local tea stall, participated in weddings, Hindu festivals such as puja and Friday Jumma prayer for Muslims, ate with both Hindus and Muslim families and lived with a Koibartta fishing family. Frequently tea and biscuits, betel leaf and nuts (*pan-supari*) were shared and on such occasions there was a great deal of conversation on a range of issues. Such free-flowing conversation provided more scope for informants to digress and raise issues that they considered important. Often a throw away comment by an interviewee would lead to important new information that would not have been obtained from more formal survey techniques. Such leads were often followed up with other informants to establish the validity of particular issues and views. Additional information was collected through informal discussions and observations when visiting fishing people while they were fishing in rivers and other water bodies, drying and repairing their nets, selling fish on the water or in the fish market or sometimes while they were playing cards and gossiping (see figure: 1.7-1.10). Engaging in such activities were markers of the author's transition from outsider to insider.

Being a Bangladeshi who became to some degree an insider (deshi gobeshok) had both advantages and disadvantages. In certain respects the author was better equipped than a foreign researcher to understand the social world of the village community. However, as an urban educated Bangladeshi (shohorer manush/ people from the town) the author faced similar problems to those of foreign researchers (Arens & Beurden, 1977; Blanchet, 1984; Gardner, 1995; Kotalova (1993), and White, 1992). Such researchers have produced excellent ethnographies and it cannot be assumed that 'native' observer possess privileged insights about the lives of the people he/she studies (see Ahmed, 2002). Both 'insider' and 'outsider' researchers' backgrounds, education, class origin, gender and race may shape the ethnographic encounter in both positive and negative ways. Where the author faced some problems was with regard to the minority status of Hindus in Bangladeshi society and the sensitivities surrounding questions of land ownership and relationships with Muslim fishers. Thus, Koibortta fishers were reluctant to discuss their relations with the wider Muslim community and to show land and fishery leasing documents which affected their livelihoods and even their right to remain in their homes.



Figure 1.7: The researcher's home



Figure 1.8: The researcher having lunch with a fishing family



Figure 1.9: Crossing the Ghorauttra River by ferry boat



Figure 1.10: Researcher plying a fishing boat

1.7. Chapter outline

Chapter one provides a general discussion of the main focus of the thesis and the conceptual and policy issues that stimulated it and gives a brief description of the study methods, sources of data, fieldwork experience and encounters. Chapter two examines how anthropologists have studied fishing peoples in general and in South Asia, particularly Bangladesh. It concentrates on those studies which have examined property rights regimes and indigenous knowledge among fishing peoples. It reviews and evaluates the international literature on property rights regimes and indigenous knowledge pointing out their strengths and their shortcomings and how this study can be situated within this literature.

Chapter three focuses on the role of property rights in inland open water fisheries in Bangladesh and elsewhere. It takes up current theoretical and policy debates on property rights and fishing practices in the global and Bangladesh context.

Chapter four describes the ecology and history of the region where the study area is located. It first discusses the importance of wetlands to the ecology of the region and the threats they are facing. Secondly, it gives a brief history of the development of

Koibortta communities who have adapted their way of life to the specific ecological and other conditions found in the wetlands region.

Chapter five provides a description of the main field site selected for the study. It introduces the Koibortta fishing peoples of the village of Krishnapur and surrounding areas, describing their spatial locations, physical facilities, housing patterns and other socio-economic and demographic aspects. Also discussed is the economic structure of the village and how agriculture and fishing are organized, food security and livelihood strategies of the fishing people, and gendered and other divisions of labour in the fishing economy, food habits and fish food consumption patterns. Included is a brief discussion of how the growing demand for fresh water fish from overseas Bengalis and Bangladeshis is affecting local supplies of fish, people's protein intake and the general food security and livelihoods of the Koibortta.

Chapter six focuses on Krishnapur fishers' indigenous knowledge and practices related to their fishing environment, fish ecology, stock enhancement, fish habitat, fish breeding, fish catching and other fishing activities. The chapter goes on to describe their beliefs and ritual practices and the role they play in sustaining fish stocks, supplying food for direct consumption, trade and reciprocal domestic obligations and contributing to local medical practices.

Chapter seven includes a general description of Krishnapur and neighbouring fishing village fisheries resources, gives a brief history of Krishnapur fishers' struggle in gaining access to the local water bodies, and examines how fishers are able to gain some access and organise fishing collectively, despite formal and often exploitative control by private leasing interests. It particularly looks at the social networks through which fishers organize their fishing activities and share the limited resources among themselves and how these networks function within local institutional structures of the village and village clusters in the study area. Of particular importance are the kinship and other bases of social and local political organization which range from kin and community-based institutions such as lineage (gwati-gusthi), ward committee/village committee (doshok) to multi-village (hajarkee) networks. These networks and institutions have distinct local characteristics and play important roles in mobilising fishers to deal collectively with, among other things,

issues of leasing water bodies, organising fishing activities, and countering what are perceived as the unjust and heavy-handed actions of other powerful interests groups aimed at controlling Krishnapur fishers' access rights to local water bodies.

Chapter eight summarizes the main findings and concludes with a brief discussion of the broad issue of small-scale fishers' capacity to manage their own water bodies equitably and sustainably.

Endnote

¹ In this thesis I use the word 'Koibortta' to refer to the fishing community studied. In most studies in which this word is used the spelling varies: kaibartta, kaibarta etc. A more accurate transcription from the Bengali is Koibortta. However, when referring to other studies, I will use the spelling found there.

² Fish is an excellent source of readily digested, high quality animal protein. It is high in lysine and essential amino acids. Lysine is more than 10 percent of the protein in fish and only 2.8 percent in rice. This makes it particularly suitable for complementing the high carbohydrate diets prevailing among the poorer sections of the population in both the developed and developing countries. Fish is the most important as a source of protein, although its contribution to energy is also important. However, the vital role of fish in nutrition is probably due to its richness in micronutrients that are generally not found in staple foods. It is a very important source of pre-formed Vitamin A and Vitamin D, if its oil is ingested. Fish also contains thiamine and riboflavin (Vitamin B1 and B2). It is a source of iron, prosperous and calcium and other important trace elements. Marine fish is a good source of iodine. Fish also contribute fatty acids that are necessary for the proper development of the brain and body. Fatty fish is high in polyunsaturated fatty acids, especially omega-3 which is now considered important in lowering harmful blood cholesterol levels. The contribution that fish can make to the nutritional status of young children and lactating women is particularly significant. Their protein requirements are much higher because protein is required for growth. For children, whose stomachs cannot digest the bulk of starchy staples (maize and cassava in particular), incorporation of a small quantity of fish can substantially improve the biological value of the diet and contribute to significant improvements in nutritional security (FAO, 2004).

³ In 1995-96, total quantity of fish exported increased 147% over the period of 1989-90, which reflects an increased availability of fish for export in the country. In terms of volume, value and participation, the domestic fish market is large and scattered throughout the country. In recent years, Bangladesh is earning a considerable amount of foreign exchange by exporting fish and fish products. Share of fish exports, both in terms of quantity and of value, has also increased. During the last decade, the share of export earnings from fish and fish products varied from 7% to 13% of total export earnings of Bangladesh. In terms of total quantity of export of 'aqua-products', the quantity exported has almost doubled since 1988-89 (Rahman, 1995). Due to high domestic and international demand, the prices of exportable species have increased significantly (Subasinghe, 2001). Fish species that do not attain large sizes are termed *chotomaach* (finfish/ other fish). The majority of finfish, (according to Rahman (1989); there are 260 species of finfish belonging to 55 families are found in the inland open waters of Bangladesh, besides 63 species of prawn, several species of crab, tortoise and turtles), belong to this category. They are important from the viewpoint of providing nutrition and subsistence and supplemental income to the vast majority of the village people including the poor, the landless and the destitute.

4. Bangladesh is a small part of the hydrodynamic system that includes the countries of Bhutan, China, India, and Nepal. Bangladesh lies at the receiving end of this hydrodynamic system. The Ganges-Brahmaputra delta, of which Bangladesh is a part, has been created by deposition of river-borne sediments. In 1974 the Indian Government began to divert the waters of the Ganges through a

barrage (dam) at Farakka on the border with Bangladesh.. The barrage, which was built to prevent Kolkata's port from silting, has seriously affected Bangladesh's agriculture, navigation, fisheries, forestry, salinity and various other components of the ecosystem. The massive withdrawal of dry season Ganges flow by India had a serious impact on every sphere of life in the Ganges dependent area of Bangladesh. It imposed massive financial, infrastructural and environmental losses in Bangladesh's agriculture, fisheries, forestry, industry, navigation, water supply, etc. Scarcity of water in the main Ganges river course and its distributaries disturbed the flow pattern, velocity turbidity, total dissolved solids (TDS) and salinity levels on which fisheries thrive. The Gangetic water system supports over 200 species of freshwater fish and 18 species of prawns in the area. Fish catches dwindled and thousands of fishers were consequently left without jobs. During the post-Farakka years the Ganges flow reduction has affected the navigation sector as well. More than 320 km of major and medium navigable waterways were rendered inoperative during the dry season, affecting the livelihoods of hundreds of boatmen. (Ahmed, 2004). Over the last two decades, Bangladesh has tried unsuccessfully to come to some agreement with India and the other co-riparian nations over water sharing (Khalequezzaman, 1993, Banglapedia, 2005).

⁵ . During the last 10 to 15 years, a number of fish processing plants (Sea Mark, Sar & Co, Anraj, Kuliarchar fisheries and others) have been exporting fresh water fish (beside shrimp) to the USA, UK, Middle East, Japan, Singapore, Malaysia, Thailand, Hong Kong, Australia, Canada and other places, where there is a large Bangladeshi and Bengali diaspora market.

CHAPTER TWO

Anthropological approaches to the study of fishing communities, common property rights and indigenous knowledge in South Asia

2.1.Overview

This chapter examines the anthropological literature on common property rights (CPR) and indigenous knowledge (IK) in fishing with particular reference to South Asia and Bangladesh. There is a large body of general anthropological and sociological literature, which covers a wide range of issues related to fish, fisheries and fishing communities but not many on CPR and IK which are based on a detailed ethnographic description of fishing communities and their practices. Thus the chapter discusses this literature, focusing mainly on the studies of property rights regimes and indigenous knowledge among fishing peoples and shows how the present study relates to these issues. There are two separate but overlapping literatures on CPR and IK, each of which deals with particular themes. These include common property resources and their management regimes, property rights regimes and access of different interest groups to fisheries resources, debates over the tragedy of the commons, exploitation and sustainability of fisheries resources, regulatory regimes and management practices in different fishing environments (state control, private or collective/community control), role of indigenous knowledge and practices in common property fisheries resources management and the relations and interactions between property rights regimes and indigenous fishing knowledge and practices.

2.2.Introduction

Fishing is a means of livelihood and subsistence for many rural and coastal communities across the world. It is an ancient occupation dating back to pre-historic times (Collins, 1976). As a subject of anthropological interest, Palsson (1991) argues that fishers and fishing have been part of the anthropological enterprise since the subject emerged with the expansion of Europe overseas from the 15th century

on. He points out that Anthropology itself developed through encounters with other peoples and cultures associated with lands across uncharted waters. Palsson goes on to argue that anthropology, as the study of humanity, is as much the child of seafaring as colonialism and references to fish, fishers and fishing are found throughout the anthropological literature. Lagoon and deep-sea fishing were central to Malinowski's work on the Trobrianders of Papua New Guinea (1918) and Mauss's (1979) work on the band-organized coastal Inuit of Canada provides an early statement of the relation between what Mauss referred to as organic and super organic culture. 19th century evolutionists such as Morgan (1928) saw fishing as a central element in the development of the human species, describing fishing as a form of hunting and gathering. Others, such as Engels (1942) paid little attention to fishing, a circumstance that has given rise to difficulties in Marxist anthropological attempts to analyse fishing economies.

One of the first detailed ethnographically based longitudinal studies of small-scale fishers was that of Firth (1941, 1966) who did research among Malay fishermen in the 1930s and 1960s. These seminal works remain classics of economic anthropology as they provide closely observed descriptions of fishing practices and their transformation over a thirty-year period. Along with this study, there are other notable anthropological contributions to the understanding of the history and transformation of fishing as well as the comparative study of the differential social, cultural and economic impact of commercial and capitalist development on fish, capital and labour at various periods and in various places. Though these accounts are not solely devoted to fishing economy and activities, many provide valuable information on the material culture of the people concerned. On the other hand, there are some studies, which provide descriptions of fishing as part of a broader examination of the society in question. The economy of many fishing communities shares many of the general characteristics of an agricultural economy but also has special features arising from its specific technical conditions. Thus populations dependent on fishing may also achieve sedentary life styles, ranging from the small settlements of the Andaman Islanders to the substantial villages of certain peoples of the American Northeast Coast. Others such as the Nuer of Southern Sudan are opportunistic fishers who spearfish during a brief season in years when the Nile

floods. They have little in common with the North American Nootka or with contemporary Norwegian trawler operators and crews. In some places, fishing forms part of a semi-subsistence peasant activity, while in other places it can be adequately understood only in relation to the rise of mercantile and industrial capitalism where fishers work under conditions similar to agricultural and industrial labourers or as commercial and capitalist entrepreneurs.

Halapua (1982) describes the organization and technical base of production in Tonga's small-scale commercial fisheries and explains that capital investment alone is inadequate in promoting fisheries development as it neglects the social relationships under which production and distribution are carried out. Acheson's (1981) review of the anthropology of fishing literature shows how fishermen have developed a wide variety of norms and institutions to share risk, establish de facto property rights over fish, reduce competition, ensure markets, gain access to information about the locations of fish stock and so on.

In the past, the study of fishing and fishing peoples attracted less anthropological interest than that devoted to the study of agrarian communities. More recently, interest in fisheries has grown (Acheson, 1989; Balland & Platteau, 1996; Berkes et al., 1989; Broomley, 1992; Dyer and McGoodwin, 1994; Khnudesen, 1995; McCay & Acheson, 1987; McCay & Carolyn, 1990; Pomeroy, 1994; Berkes, 1985; Leal, 1996 & 1998) and the anthropology of fishing is now an established specialization with its own journal *Maritime Anthropological Studies (MAST)*, which has been revived recently. Most of these studies concentrate on the present day organization of marine fisheries, including inshore, offshore and estuarine fishing rather than inland fishers. More generally, it remains the case that we know more about fish species than about the people who fish.

2.3.Literature on the fisheries of South Asia

With regard to South Asia, in 1982 Paul Alexander (1982) noted that the region did not have any comprehensive ethnography of a fishing community. This is not entirely correct, as a number of descriptive anthropological studies on fishers had been undertaken prior to 1982. Since then, the situation has improved somewhat, but compared to the work done on South Asian peasant cultivators and tribal

communities, anthropologists of South Asia have shown less interest in fishing and fisher communities. Among the most important anthropological studies of South Asian fishers are those of Dwivedi (1980), Gulati (1981, 1983a), Klausen (1964), and Selvaraj (1975) on Keralan fishers, Punekar on the Bombay Koli (1959), Bavinck (2001 & 1984) on the fishers of Tamil Nadu of India and Sri Lanka, Krishna (1990) and Ram (1991) on the Mukkuvar and Pramanik (1993), Mukherjee (1968, 1970) and Roychoudhuri (1980) on West Bengali fishers, Hazra (1970) on the marine fishers of Gujrat, Suryanarayana (1977) and Razeq (1970) on the marine fishers of Andhra Pradesh, and Mukhopadyaya (1968) on the fishermen of the West Bengal Sundarban. Apart from the work of Ram and Bavinck, the remainder provide largely descriptive and relatively untheorised accounts of fishing communities of India.

Literary and historical sources provide much information on South Asian fishers, particularly in Bengal (Buchanan-Hamilton, 1877; Day, 1871; De, 1910; Gupta, 1908; Hora, 1948; Saha, 1970). For example, the eminent ichthyologist, Hora (1948), has given a detailed account of Hindu views of fish and fisheries. In a series of articles published in the *Journal of the Royal Asiatic Society of Bengal* between the 1930s and 1950s, Hora examined the question of fish and fisheries in ancient India from around 600 B.C. In particular, he analysed references to fish in the *Ramayana* and in *Kautilya's Arthashastra*. His articles are full of very useful information as to the social, economic and cultural structures of ancient India in so far as it relates to fish and fisheries (Pokrant, 1999). In the case of Bengal (which until 1947 included what became Bangladesh in 1971), there are several official accounts of fishing from the British colonial and early post-colonial periods (Buchanan-Hamilton, 1877; Day, 1871; De, 1910). However, none were written by trained anthropologists and were carried out to serve the interests of colonial state policy. Anthropologists and historians have largely ignored Bengali and Bangladeshi fishers, concentrating on peasant communities (Bandyopadhyay, 1990, 1993; Bandyopadhyay, et al., 1994; Bose, 1986; Guha, 1983; Hartmann and Boyce, 1983; Pokrant, Reeves and McGuire, 1999; Ray, 1979; Rozario, 1992; van Schendel, 1982).

2.4.Literature on the fisheries of Bangladesh

Turning to Bangladesh, despite the fact that it has one of the richest and largest inland fisheries in South Asia (World Bank, 1998), which provides the population with 63% of its total animal protein intake, gives full-time employment to 1.4 million people and part-time employment to some 12 million people, contributes 6.15% to the country's GDP and some 6-7% of export income (Farooque, 1997; Nasiruddin, 2001), there is no long-established tradition of research on the history and anthropology of the country's diverse fishing environments and fishing peoples (Feldman, 1982; Jansen, 1987; Jansen, Devnath, & Das, 1985; Skagerstam and Brattsrom, 1991; Pramanik, 1993; Raychoudhuri, 1980) and no historical ethnographic studies have been done on Bangladesh fishers.

Much of the fisheries literature in Bangladesh is technical and concentrates on fish and fish resources, artificial rearing, fish biology, and fisheries management. Many of these studies provide valuable ethnographic descriptions of fishing activities and communities but these are usually brief, limited in scope, ahistorical, often based on short field trips, difficult to access and subordinate to the broader non-anthropological objectives of the research (FAP-6, 1993). Broadly the literature available on Bengal or Bangladesh fisheries can be divided into two categories: historical/administrative and literary.

Historical and administrative studies are written by some historians and British colonial officials (Buchanan-Hamilton (1877), Das (1931, 1932), De (1910), Gupta (1908), Hora (1948), Hunter (1877), Jack (1916), O'Malley (1908, 1923), and Raychoudhuri (1908). There is also a contemporary literature written between 1947 and 2003. Included here are Indian studies by Barman (1963), Pramanik (1993), Ray (1979), Sanyal (1965), Saha (1970) and Bangladesh studies by Agüero (1989), Alam (1998), Alam (2001), Blowfield and Haque (1995), Habib (1992), and Pokrant & Rashid (1997). Most of these literatures focus on socio-economic or cultural aspects of fishing communities, which are relevant to the present research.

Another body of literature consists of literary sources, particularly novels written on different fishing contexts and places. These novels provide unique descriptions of the broader structures of fishing communities at different periods of time (Pokrant

and Reeves, 1998). They include *Padma River Boatman* by Manik Bandopadhyaya (1990), *A River Called Titas* by Advaita Malla Barman (1963), *Ganga* by Shamaresh Basu (1963) and *Poka Makorer Ghar Basati* by Selina Hossain (1986).

Recent work by Pokrant, Reeves and McGuire (1996a, 1996b) focuses mainly on the ethno historic and ethnographic aspects of fishing peoples of Bangladesh/Bengal. These studies show the highly differentiated nature of Bengal fishing peoples (jele/Jaila/ jailla/ jalo) in terms of occupational specialization, religion, ethnicity, class, status and region. In colonial Bengal, fishers and fisher-related castes and groups were socially, politically and economically separate from the wider Hindu and Muslim communities and consisted mainly of low-caste and outcaste Hindus.(See appendix:2.1)

Pokrant et al. (1996, 1997) also mention that over the centuries Bengal fishers were subject to Buddhist, Hindu and Muslim influences and many were absorbed into the emerging Bengali community by the time of British rule in the late 18th century. In addition to specialized fishing castes and groups, most rural Bengalis engaged in fishing as part of the seasonal agricultural cycle and some were boatmen (Majhi/ Naiya) and did fishing-related work such as fish trading, net and boat making and the curing and preservation of fish.

Risley (1981) in his study *The Tribes and Caste of Bengal*, mentioned that originally non-Hindu fisher-hunter-gatherers, converted to Hinduism and many became settled as agriculturists even attaining non-cultivating landlord status in such areas as Medinipur (West Bengal), but a large minority remained fishers.. According to the 1901 census, there were some 550,000 fishers in Bengal of which over 95 per cent was Hindu (Koibortta, Kewat, Malo/Jhalo/Jaliya, Tiwar/tiyar (Rajbangshi), Namasudra (Jiani/charal), Das Shikari (Rajbangshi) and Berua). Considered unclean by Brahmins and other high castes, they lived in separate communities, practiced endogamy (in-group marriage) and mixed only with their caste equals. Socially despised, some tried to leave their fishing profession through accumulating wealth and adopting the ritual and social practices of higher caste communities. Among the Hindus, the largest fishing caste or *jati* in old Bengal was the Kaibarta/ Koibortta and they are thought to have been one of the region's

earliest inhabitants (Risley, 1981). In another study Russell & Hira Lal (1916) mentioned that the Kaibartta/ Koibortta consider fishing to have been their original occupation and tell a story to the effect that their ancestors saved the deity in their boat on the occasion of the deluge. In return, they were given the power of catching three or four times as many fish as others.

Khan (1989) states that originally low caste (Sudra) Hindus dominated inland capture fisheries. Since 1947 Muslims have entered the profession in greater numbers, despite the low status of the profession and its historical association with Hindus. Their entry was facilitated by the migration of Hindus to India after partition in 1947. In addition, land fragmentation caused by inheritance laws, growing population pressure and natural erosion of riverbanks has forced many Muslims into fishing.

In the light of the limited ethnographic and historical work on Bangladesh inland fishers, this study, the first of its kind in Bangladesh, examines the inland open capture fishers of the village of Krishnapur in Kishoreganj District who are members of the Koibortta fishing caste, one of the most important inland fishing castes in Bangladesh. Its main focus is the role of common property rights, indigenous fishers' knowledge and local social networks in fishers' livelihood strategies.

2.5.Literature on CPR and management of fisheries: global context

All societies regulate access to scarce and valued resources through some form of property rights regime. Several types of property resources regimes have been identified: open access property; communal property; state property and private property (Berkes & Farvar, 1989). A property rights regime is a socially organized set of rules, sanctions and practices through which a property right is defined, regulated and used. It is also a claim made to a benefit from something scarce and valued by a category of users (see Bromley, 1992).

According to Gibbs & Bromley (1989):

Common property rights are a special class of property rights, which assure individuals' access to resources over which they have collective claims. Villagers' interest in forests, grazing lands; irrigation water, fisheries and

wildlife all provide examples of resources, which may be managed as a common property.

It is argued by some that resources owned in common such as oceans, rivers, common grazing grounds, parks, and public lands are doomed to overexploitation. The argument goes that as such resources are owned by no one, they are protected by no one. In the absence of ownership rights the users of such resources have no incentive to protect them. However, Acheson, among others, rejected the inevitability of a tragedy of common property resources, and in his study of Maine lobster fishermen has described their property rights and how they maintain and limit access to a lobster fishing territory, although the fishery is in the open sea, a public domain.

Historically, state and private property rights regimes have expanded often at the expense of communal or common property regimes. In recent years there has been renewed scholarly interest in the value of common property rights in the management of natural resources, including fisheries. This has been partly in response to Hardin's negative assessment of the role of common property in management of resources but also to the worsening situation of many peoples hitherto dependent on common property rights for survival. All around the world, fish stocks, forests, grasslands, air, soils, wildlife, and water quality have been seriously degraded by human activity. A key question, then, is under what conditions will people conserve the resources on which their livelihood depends? Hardin's classic 'tragedy of commons' article (1968) examined the problem of overexploitation of common property resources (including fisheries resources) under what he called common property practices, concluding that such practices led inevitably to environmental degradation. However, critics have pointed out that he conflated open access with common property and failed to examine the historical and ethnographic record on actual management practices among fishers, foresters and others who lived under common property rights regimes (Anderson and Simmons, 1993; Dyer & McGoodwin, 1994; McCay & Acheson, 1987; Ostrom, 1990). According to Hardin's idea of tragedy of commons, when the conservation of common property resources is no one's responsibility then it obviously results in overexploitation, resources stock depletion and environmental degradation. While

there is some truth to this view, there are many studies which show that where rights of access to common property is determined on the basis of long-standing local traditions and customs which include use-rules, use-restrictions and users rights protection, over-exploitation of common property resources can be minimised and even eliminated (Acheson, 1989; Baines, 1989; Berkes, 1995; Davis, 1984; Lesslie, 2000; Ruddle, 1989; Moorehead, 1989; McGoodwin, 1990; Ostrom, 1990; Pomeroy, 1999).

The common property rights (CPR) issue has led to vigorous debate over key concepts and their applicability to different environmental and other settings (Hardin, 1968, 1991, 1993, 1994, 1998; Berkes, 1993 & 1996; Fenny et al., 1990 & 1998, Ostrom, 1998, 1990, 1985 & 1977, Roe, 1994 & 1992). It is important at the outset to distinguish common property from un-owned non-property or open- access (res nullius: 'no one's property'). The latter is defined as a resource to which access is unrestricted and can be used by any one. Examples would be the air we breathe and areas of the oceans not owned by particular states (Ciriacy-Wantrup and Bishop, 1975; Knudsen, 1995). A completely open access regime is a free for all. In an open-access fishery there would be no limits on who can fish, the gear they can use or how many fish can be caught (Alessi, 1998). Ludicello, Weber and Wieland (1999) in their study *Fish, Markets and Fishermen* mention that when a fishery is open to anyone, there is no assurance that a fish not caught today will be around tomorrow. In fact, someone else will probably catch it. So why not catch it yourself? Why invest in the long-term sustainability of the fishery if what happens tomorrow or next week or next year is highly uncertain? The authors mention that leaving fisheries open to anyone is often done with the best of intentions. It is an attempt to be fair to all and to share the opportunity of fishing. However, the outcome of open access fishing is neither fair nor profitable. An open access fishery will attract too many boats, too many people, and too much fishing power. The result is an over fished fishery. In Bangladesh, an open access fishery was created by government fiat in 1995 which had largely negative consequences for small-scale fishers such as the Koirbortta (see chapter three & seven for more detail).

Turning to common property rights, Ciriacy-Wantrup and Bishop (1980) point out that these rights may assume many different forms, but define it as rights shared by

the members of a group with exclusive access to a resource. Several writers have commented on the advantages of common property rights particularly in the management of what are known as common pool resources. For example, Ostrom (1990) argues that common property could be optimal under a number of conditions, ranging from nearly open access to a system of strict controls and rules. Acheson (1981) mentions that in the case of fisheries, access to resources and property rights regimes vary from place to place. There are many societies where fishery resources are considered as open to all and fishers can fish where they like. But there are also societies where fishers have established fishing rights, which may also involve control over the 'fishing space' and not only the resource. In some places, forms of access to common property resources are more informal without any explicitly formulated rules, while in other places, there are clearly stated rules and rituals imposed self consciously. For example, in the United States and Australia, natural resources such as fisheries are, respectively, the public's and the Crown's resources, and property rights in fisheries are defined in terms of an individual's right to try to harvest or otherwise use fisheries resources. In other countries, such as in Japan and Taiwan, there are instances where the property rights for fisheries resources belong to local communities.

McGoodwin (1990) discusses two forms of fishing access: one he refers to as 'a passive means of indigenous regulation' and the other where fishing societies control their fisheries resources through ritualised and customary patterns of behaviour. He argues these both play a positive role in conserving fish resources.

Until recently, anthropologists have paid comparatively little attention to the role of common property rights regimes in the management of fisheries. For example, anthropological classics such as Firth's *Malay Fishermen* (1941, 1966) and Fraser's *Rusembilan: A Malay Fishing Village in Southern Thailand* (1960) did not discuss property rights and fisheries resources management issues. Edward Norbeck (1954) devoted less than one page of his *Takashima: A Japanese Fishing Community* to the question of fishing rights and licenses. However, in the last two decades, a significant number of studies have been conducted on property rights and management issues in fisheries, concentrating largely on marine or coastal fisheries. Few are on the world's largest inland open water fisheries of India, China and

Bangladesh. Among the most important marine fisheries studies are Acheson (1989) on the Maine lobster industry, Alexander's (1982) study of Sri Lankan fishermen, Amarasinghe's (1989) work on South Sri Lankan fishers, Anderson and Wadel's (1972) study of North Atlantic fishermen, Cordell (1974) on property rights and management in the small-boat fishing of South-West Nova Scotia, Frazer's (1966) study of the fishermen of South Thailand (1966), Gulati (1981) on the role of women in a fishing village of Kerala, Jentoft and Krestofersen's (1989) on fishermen's co-management in the Loften fishery, Kalland's (1981, 1995) work on the fishing community of 'Tokugawa' and 'Singu' of Japan, Mesinus (1992) on fisheries management in Peru, McGoodwin's (1987) study of Mexico's fishery, Merlijn's (1989) study of the role of middle-men in small-scale fisheries of Sarawak, Malaysia, Platteau's (1982) study of Kerala fishers, Maarten Bavinck study on fisheries conflicts, governance, management issues, myth and realities in the fishing regulations of Coromandel Coast fishing in Tamil Nadu (2003, 2001, 1998 & 1997) and the changing economy of the petty / artisanal fishermen of Northern Sri Lanka (1987 & 1984), and Ruddle's (1989) study of Japanese coastal fisheries. Sugnum's (1997) work on fisheries management of small-water bodies in seven countries in Africa, Asia and Latin America focused on common property rights issues, management, and fishers' access to different fisheries resources in a global context.

To a greater or lesser degree, these studies take up common property rights issues. A few examples will be discussed to illustrate the kinds of issues addressed and their relevance for the present study.

Acheson's review of fishing research (1981) pointed out that two important kinds of regularities appear to exist across fishing communities. First, in a number of areas there are informal rules concerning the conditions under which gear of different kinds can and should be used which assist in minimizing conflicts. Second, the effects of unconstrained competition and conflict are so costly that fishers in many locations have organized to have laws passed to limit access to fisheries and fishers. In these cases, fishers were able to exert enough political pressure to achieve their ends. These comments have relevance in the Bangladesh context where many fishers, including the Koibortta of Krishnapur, have developed their own informal

rules to regulate access to fishing grounds and the ways in which fishing is conducted. However, Koibortta fishers have been less successful in ensuring that the legal system is able to protect their fishing rights.

Acheson (1989) has taken up the question of whether resources owned in common such as oceans, rivers, common grazing grounds, parks, and public lands are doomed to overexploitation, as Hardin's 'tragedy of the commons thesis' would have it. In his work on the Maine lobster fishery (an offshore trap fishery), he found that fishermen have common property rights over areas of the ocean, which are legally enforced, and they are able to maintain a lobster fishing territory and limit access to it. The fishermen here have long been concerned about their resource, and have increasingly entered the political arena to lobby for protective legislation, which underlines the fact, that common ownership- not just private ownership- can result in conservation and an economically sustainable fishery (Acheson, 1989). Krishnapur fishers have also been concerned for decades over their rights to fishing bodies and the conservation of fisheries and have pressured for a more equitable fishing rights system. While these fishers do not have the full legal protection accorded Acheson's oyster farmers, where they are able to have some control of small fishing bodies, they have been able to share access in what they consider to be a more equitable manner. However, they have been less successful in ensuring sustainability of the resources partly because they have been subject to constant interference from more powerful non-fisher interest groups and the weakness of government policies which are more revenue-oriented than concerned with ensuring equitable and sustainable use of the resources. Whether small-scale fishers in Krishnapur, if provided with more secure access and control over fishing bodies, are more likely to ensure sustainability of fish resources is not known at this point. McGoodwin (1990) has shown that in many cases, small-scale fishers are unable to mobilize effectively and often come off the losers. The reasons for this include remoteness of indigenous fishing populations from the national centres where decisions are made; that fishers often belong to ethnic and other minorities and are ignored by the authorities; and sometimes lack knowledge of the appropriate ways to articulate their views and gain access to lawmakers who, in turn, have very little information on traditional fishing regulations. Krishnapur fishers also operate under

similar circumstances. They are largely illiterate, live far from the centres of power, and feel insecure because they are from a minority religious community.

Kalland (1995) has argued that under such circumstances it is important for social anthropologists in particular to study such institutions so that indigenous concepts of fishing rights can be incorporated, if necessary in modified form, in the newly emerging management systems. Criticizing Hardin's theory of the commons, Kalland mentioned that the protection of fisheries resources is not only a question of fishing regulations but depends on population dynamics, on whether or not there are economically or socially more rewarding opportunities for employment locally or elsewhere, and on prevailing values and conventions. In order to exploit a resource in a sustainable way, fishers need an appropriate technology as well as the knowledge and social organization for its operations. Kalland further mentioned that besides paying attention to the technological efficiency of catching fish, attention must be paid to the maintenance and replacement of this technology, how necessary knowledge of fishing activities is preserved, expended and transmitted from one generation to the next, the extent to which knowledge and information is shared or kept secret, who controls the means of production, and the possibilities for and constraints upon capital accumulation (Kalland, 1995, pp. 6-7). Krishnapur fishers are themselves adopting new technologies but, as is shown in chapter six, such technologies allow a more efficient exploitation of fish resources as measured by catch per unit of effort rather than being oriented to maintaining fish stocks.

Another example, which challenges the 'tragedy of the commons' thesis, is that of the small lobster fishing community of Putna Allen of Mexico (Leslie, 2000, p. 52). The *campo system* of Putna Allen fishing community effectively restricted access to lobster resources among cooperative members without state involvement. By creating a social institution to protect their private investments in lobster shelters, fishers themselves developed a localized system of conservationist fishing practices through private property rights sanctioned by a set of formal locally devised written rules. Fishers acknowledged that they had more at stake than simply earning short-term income because they wished to safeguard their *Campos* to protect their substantial investments. The locally developed and operated *campo* system prevented over exploitative fishing practices and the "tragedy of the commons"

without state involvement. Over time, the 'campo system' became the framework that distributed access to lobster resources, fishing work organization, and allocation of returns from the lobster fishing. Today the 'campo system' is a well-defined set of property rights in a form of corporate private ownership governed by formal rules created and enforced by local fishers (Leslie, 2000, pp. 46-52). Krishnapur fishers share many of the views of their 'campo' counterparts regarding the need to sustain fish resources and to operate with some degree of autonomy from the state. But they have been unable to obtain clear, secure and long-term legal title to fishing bodies.

Many researchers argue that while environmental degradation is a major problem, in many cases fishers who are dependent on fisheries resources, and their governments, have acted to generate effective rules to manage those resources at sustainable levels (Ahmed et al., 1997; Berkes, 1989; McCay & Acheson, 1987; Ostrom, 1990; Pinkerton, 1989; Ruddle & Akimichi, 1984). One such successfully managed resource is the Maine lobster fishery mentioned earlier, where catches are currently at record high levels despite decades of intense exploitation, with catches having remained relatively stable between 1947 and 1988 (Maine Department of Marine Resources, 1995). Several factors produced these consistently high catches, but there is general agreement that the regulatory apparatus has played an important role. In Bangladesh, such a fisher-focused regulatory apparatus has not yet been developed and implemented to the degree necessary to assist Krishnapur fishers to manage their own resources. Rather, fishers are caught in a struggle between government and powerful local interests, some of whom have close ties with government officials (police and sub-district and district administrators) and politicians.

Ferguson and Derman's (1995) study of African fishing communities shows that in a growing number of cases throughout Africa, communities are exploited by outsiders and the continuation of local cultures and livelihoods is seriously threatened. In these cases, the communities often find themselves powerless to prevent the expropriation of the resources over which they previously had legal or customary rights/controls. They further point out that such action by outsiders led to human rights violations within an authoritarian political context. Krishnapur fishers

have been subject to such pressures as members of a minority religious group and as residents of an area rich in fish resources which have attracted non-fisher groups locally and from other parts of the region. Others studies argue that private property regimes might have some success in reducing the pressure upon resources but cannot eliminate other adverse effects on the resources (Edward, 1994; Johnson & Libecap, 1982; Keen, 1983; McGoodwin, 1990; Scott, 1988a; Seijo, 1993).

Because of such failures in privatised fisheries, many fisheries researchers put emphasis on the importance of common property rights in ensuring equitable returns and sustainable catches. Ostrom (1990, pp. 90-101) has identified several factors that have enabled groups to manage commons over long periods without bringing about overexploitation. She found, for example, that boundaries must be well defined, rules must be linked to local conditions, and sanctions must be imposed when rules are violated. Usually, a strong community tradition is essential for such management, as well as the absence of interference by governments. The folk management and co-management fisheries regimes that have arisen around the world show some promise in addressing many issues of sustainability and equity that plague fisheries management today. However, the development of such regimes is by no means automatic or simple, nor is their survival assured, as this study demonstrates (Pinkerton, 1994a, p. 334). Ostrom (1994) further mentions that fishers can obtain good earnings from the fisheries where they control them with their own management practices and can produce fish by their own efforts and where they are able to protect their rights from non-fishers who have tended to reap the benefits of community efforts by both legal and illegal access.

Davis's (1984) study of the fishers of the East Coast of Canada highlights the voices of the traditional fishers who have been exercising their customary rights on the fisheries for decades. He quotes one fisherman who says:

I have fished here all my life. So did my father and his father. Men in my family have been fish'n here for a long time. If anyone's got a right to fish here it's me and I'm no different than most of the fellas fish'n here.

Here, the local fishers see themselves as having exclusive rights to their territory, which extends eleven miles along the coast and more than thirteen miles seaward.

They actively defend it against outsiders and to avoid conflicts between local fishers using different gears, fishers divide their territory into different sectors, each allowing a specific kind of gear. Bowles and Bowles show (1989, pp. 236-239) that in the fisheries of Matinicus Island the fishers claim a very well defined area of 77 square miles around the island and they strictly control who will be accepted into their fishery. A fisher must live on the island and have island kinship ties or purchase property from local fishers, who then become informal sponsors, something like an apprenticeship system. Krishnapur fishers express similar views but are unable to protect what they consider to be their traditional fishing grounds as effectively as the Canadian fishers. Part of this relates to the confined nature of inland fishing bodies in Bangladesh which are located in often densely populated regions and surrounded by farmers, traders, industry and other groups, each of which makes claims on fishing bodies (see chapter 7).

A range of fisheries literature shows that in different countries, fisheries are under different forms of collective management practices. For example, in many of the reservoirs of Zimbabwe, North-eastern Brazil, North-eastern Thailand and the *ejidos* of Mexico, age-old community management is still operational along with the licensing system used in the other reservoirs. The majority of Indian and Sri Lankan reservoirs are public properties where a fixed number of licensed fishers make their living. In Cuba, the scope of the common property norm has been further widened to include depositing the catches from reservoirs into a common national pool (Sugunun, 1997).

Davis's work (1984) on East Coast Canadian fishers of Port Lameron Harbour in Nova Scotia shows how the local fishers claim exclusive rights to their territory, which extends eleven miles along the coast and more than thirteen miles seaward. They protect their fishing ground from outsiders and to avoid conflicts among themselves, they share their fishing territory in sections, and allow each a different kind of gear. In this regard, Donald R. Leal (2001, p. 12) comments:

Informally organized fisheries are playing a valuable role in fisheries management today. At the very least, government should legalize them. Fishing communities with a history of fishing nearby waters should be allowed to establish property rights to those waters. The communities should have sole authority to either prevent or restrict entry. Where

boundaries are clear and where communities are allowed to keep out outsiders, the potential for controlling fishing is a good one.

It is important to note that any 'overexploitation' of fishing stocks may not simply be the result of fishers' common access to the fisheries but due to pressure of overpopulation on a fixed fisheries resource. McGoodwin (1990, p. 49) makes the point that there was a time when fishing peoples did not regulate their fisheries. Their populations were so small, and therefore their corresponding impact on their resources so small that there was no need to constrain fishing effort. But today, the increasing pressure on fisheries stocks requires measures to regulate these pressures.

Communal property regimes in coastal marine fisheries in Fiji and the Solomon Islands (Baines 1989), in coastal Japan (Ruddle, 1989), in Java and West Africa (Lasserre & Ruddle, 1983), in Mali (Moorehead, 1989) and in Hawaii (Costa-Pierce, 1987; Berkes, 1995) show that fisheries resources can be better managed when fishers and other stakeholders are directly involved in management of the resources and use rights are allocated either individually or collectively. In these cases, the devolution of management authority and responsibility is bringing about a shift in local power elites and structures. These new approaches require changes in the administrative levels of management and new laws and policies (Pomeroy, 1999).

In a number of studies, it has been shown that in some circumstances certain forms of state regulation and involvement were useful in successful management of resources, while in other cases excessive government regulation and involvement has had negative impacts on local fishers. Governments in many countries (including Bangladesh) justify interventions into fisheries on the grounds that it is in the best interests of those being regulated. However, such regulation has often resulted in more inefficient and less equitable fishing arrangements subsidised by the state. As Ostrom (1997) puts it:

When resources that were previously controlled by local participants have been nationalized, state control has usually proved to be less effective and efficient than control by those directly affected, if not disastrous in its consequences.

Under some circumstances, such as is found in Bangladesh, without the security of property rights, there are dangers of increased conflict between fisher groups and between fishers and former lessees as the latter attempt to retain their control (Pokrant, 1996, pp. 10-14).

Leal (1996) discusses several situations where government intervention in a local estuary fishing community near the Valensa of Brazil resulted in adverse impacts. The fishery was under the control of local fishing communities but at one stage the Brazilian government decided it should take steps to increase the production through modern technology such as new nylon nets, which were made available to anyone who qualified for a bank loan arranged by the government. But local fishers did not qualify for the loans and did not have enough capital to purchase the nets on their own. A few wealthy individuals around Valensa did qualify and purchased nylon nets and hired men who had never fished the estuary before. The local fishers' management system crumbled as old and new fishers fought over fishing spots. Eventually the fishery was over harvested and ultimately abandoned (Leal, 1996). In Bangladesh, small-scale fishers are also unable to obtain bank loans as they are considered bad risks and have no collateral. Loans are usually obtained from fish traders which create a system of indebtedness and reduce fishers' capacity to act in other ways. It also contributes to a resource-mining mentality even among fishers who are concerned to ensure they have sufficient income to tide them over the lean season in fishing.

According to Acheson (1995), while there is evidence that "...common property rights are associated with low labour productivity resulting from...overexploitation," this does not have to be the case and depends upon local cultural, social and economic conditions (Acheson, 1990, p. 95). The author points out those different types of fisheries require different regulatory regimes. The target species, the technology used to catch them, and the characteristics of the fishers who pursue them all create the need for different approaches (Acheson, 1990, p.152). Thus, the process of fisheries management involves solving two fundamental problems. The first is conservation or deciding what amount of fish can be harvested on a sustainable basis. The second is allocation or deciding who benefits, in what ways, and to what extent (Smith, 1988).

A progressive fisheries management policy involves a concern for equity, productivity and sustainability. By equity is meant that fishers have security in their profession and are able to obtain a decent standard of living from fishing. Productivity refers to producing more fish at less cost. Finally, strategies of sustainability are necessary to ensure a fish stock is maintained in the long term. Berkes (1994), Pomeroy et al., (1996), Pomeroy and Williams (1994), and Sen and Raajjaer-Neilsen (1996) have emphasized that government support through legislation, funding and enforcement are necessary for sustaining intervention. However, it is argued here that such intervention is required to support a range of fishing regimes, including those organised along community lines, rather than replace them. Only the government can legally establish and defend users' rights and security of tenure. One means of establishing these conditions without undermining local control is through decentralization. Without these state-sanctioned property rights, resource users will find it difficult to enforce their claims over the resource against outsiders. As chapter six shows, this is also the case among Koirbortta fishers.

Gibbs and Bromley (1989), mention that in many of the developing societies, where communal property resources have been nationalized and turned into state property this has complicated the ownership status of the resource and often led to resource depletion. There are several studies which offer numerous examples where larger governmental interventions into resource management have badly damaged perfectly workable community systems (Ostrom, 1990; Pinkerton, 1987).

On the other hand, controlled community based management systems with some government or other non-government organization involvement, at least for a certain period of time, in the coastal marine fisheries resources in Fiji and Solomon Island (Baines, 1989), in coastal Japan (Ruddle, 1989), in Java/ Indonesia and West Africa (Lasserre & Ruddle, 1983), in Mali (Moorehead, 1989) and in Hawaii (Costa-Pierce, 1987, Berkes, 1995) have been shown to be successful. The Maine lobster fishery is an example of both communal and state property, where fishermen use it as a communal resource but the state maintains some management jurisdiction (Acheson, 1989).

Bavinck's study (2001) looks in detail at common property rights and management issues in the fisheries resources of the Coromandel Coast in Tamil Nadu, India and how different groups of people (artisanal and trawler fishers) regulate access to and use marine fish resources. The study examines sea tenure in relation to discourses on legal pluralism and fishers' struggles. The study shows that access problems worldwide are often difficult to resolve as they involve many issues and many claimants or stakeholders. The study further shows that in many cases, governments are incapable of providing an effective and legitimate management framework and that the livelihoods of artisanal fishers who depend on the resources in question are in jeopardy. According to Bavinck, the government of Tamil Nadu has tried to resolve the conflict by regulating fishing rights, the end result of which has been the creation of three 'legal' systems in inshore fisheries. The author examines each system in detail and concludes that fisheries regulation is not the exclusive responsibility of the state. Instead, he notes the existence of well-defined regulatory practices among both the artisanal and trawler fishermen. As on the Coromandel Coast, Krishnapur, fishers play some role in managing their own resources, sometimes using caste groupings across villages as a means of mobilising fishers through different tiers and spatially dispersed social networks. There are also similar conflicts which in Krishnapur are between the local Krishnapur fishers (equivalent to Bavinck's artisanal fishers) and traders and leaseholders, the latter, like Bavinck's trawler fishers, clearly favoured by the state in the allocation of fishing rights. Leaseholders and traders exert their economic control through commercial and rentier capital rather than investment in their own fishing fleets. However, they also invest in nets and employ some local artisanal fishers seasonally and excluding others from their lease sites.

2.6.Literature on common property rights and management of fisheries: Bangladesh context

There is a growing body of knowledge on traditional aquatic resource management in Bangladesh which has important theoretical and practical implications for the study of riparian commons in Bangladesh and elsewhere. It is argued that such knowledge can serve as a model for efforts to establish viable and equitable

fisheries management regimes; be a source of motivation and empowerment; enable participatory approaches; and contribute to cross-cultural comparisons of traditional and new riparian commons (Soeftestad, 2000).

Despite a growing interest in aquatic management in Bangladesh, the detailed anthropological and social scientific study of fisheries management is of recent origin. There are a few donor-funded development studies on management issues, which provide limited descriptions of fisher's access to the fisheries, common property rights in inland fisheries, and fisher's indigenous practices in the management of fisheries. However, most research has focused on technical and scientific matters such as fish resources and stocking, artificial rearing, fish biology, fisheries management. More social scientific studies provide some general descriptions on diversified issues related to fisheries resources, fishing economy, organization of production, fishing gears, fish species, methods of fish catching and so on (Ahmed et al., 1997; Alam, 1998; Alam, 2001; Ali, 1992, 1997; Blowfield & Haque, 1995; FAP-6, 1993; Habib, 1992; Islam, 1979; Kremer, 1994; Minkin et al., 1997; Naqi, 1989; Pokrant, 1996a, 1996b; Pokrant et al., 1998; Raychoudhuri, 1980; Reeves, 1992; Skagerstam & Brattsrom, 1991; Thompson, 1999; Toufique, 1994,1995,1996; Tsai & Ali, 1996; Ullah, 1985; van Schendel, 1991;). Among all these studies, only a few actually deal with common property rights and management issues focusing on the strength of indigenous fishing knowledge and practices. Mahbub Alam's (2001) ethnographic study of the Hindu fishers of Charan Lake in Tangail district of Bangladesh, Toufique (1996) on property rights and issues of power in inland fisheries of Bangladesh, Khurshed Alam's (1998) comparative study of the organization and development of two fishing communities of Bangladesh, Pokrant et al.'s (1997) study of the organization and historical development of inland fisheries of Bangladesh, Ahmed's (1991) study of the management of river fisheries in Bangladesh, and more recent work by Thompson et al. (1999) and Middendorp et al.(1999) on fisheries community management programmes in various parts of Bangladesh are the major works which deal with common property rights, access to fisheries resources, organization of production and management regimes, conflicts between the state and the stakeholders, between

the fishers and newly entrants non-fishers, and the role of NGO's and other bodies in the management of the resources.

Pokrant, Reeves and McGuire (1997; 2001) have provided historical evidence on the origins and development of private leasing arrangements in Bengal fisheries. They show that the position of Bengali fishers under the British was shaped by legal changes in the 18th century related to the Permanent Settlement of 1793. The main objective of these changes was to support local estate holders and rulers, the *jomidars/ zamindars*, and to give them the authority to collect a *Jal Kar* (water tax). The authors also mention that these rights were established on non-navigable rivers, the lakes, ponds, depressions and tanks. This system eventually replaced pre-British practices, where fishers gave gifts of fish and paid occasional tolls to the agents of landlords to access fishing waters.

Mahbub Alam's (2001) study shows the complex access rights of the traditional Hindu fishers to the water resources of Charan and discusses the leasing system of common fishing grounds in relation to common property rights. The study shows that over a period of time the access to common property such as lake, became competitive and other non-fishers groups' interests became prominent. These new interest groups threatened the traditional Hindu fishers, who had customary fishing rights in fishing grounds during earlier periods. According to Alam (2001), government regulations, which allowed non-fishers to gain access to fishing waters, helped to bring about over fishing.

Ahmed (1997) points out that fishery, as well as several other food and non-food resources, were traditionally regarded as common property in Bangladesh. Only traditional low caste Hindu fishers fished full-time and developed and adopted technologies to catch fish and protect their resources. Access to fisheries was more or less open to all members of the communities living in around flooded areas. Also, a lower population placed less pressure on such fisheries. In more recent times other non-fisher interest groups have been able to exploit the poor fishers in various ways, since access is not limited.

Toufique (1996, 1997 & 1998) has examined why common property rights over Bangladesh's inland fisheries have failed to become firmly established in recent

years. He argues that the introduction of leasing or contractual systems for water resources, subsequently transferred property rights from traditional fishers to socially powerful agents, the *ijaradar* (lessees), who were not fishers.

Khaled (1985) examined leasing methods of river fisheries and found that overexploitation of the fisheries is encouraged by the government through its existing leasing system. Under this system leaseholders receive short-term leases with no guarantee that a lessee will be able to renew the lease of the same fishery in successive years. Bar and Dixon's (2001) study of methods for the management of common property resources in Bangladesh reveals that a revenue oriented fisheries management system with short lease terms where lease values increase yearly with no consideration for the productivity of water bodies encourages over fishing and destructive fishing by lessees who dewater water bodies to maximise profit at the expense of the sustainability of the fisheries resources.

Blanchet (1993) in her study of Shanir Haor in the wetland region of Bangladesh shows how property rights, fishers access to fisheries and local fishing practices differ from the text of the law. The powerful leaseholders of water estates claim ownership over all fish at all times of the year. Since the mid eighties they have required local fishers to buy fishing rights during the monsoon and have forbidden the use of fishing nets. The so-called tickets they issue only allow for the use of fishing hooks (Blanchet, 1993). Similarly, Ullah's study (1985) of the Jamuna fishermen identifies property rights on the Jamuna River and discusses how genuine fishers are excluded from mainstream fishing efforts within the existing leasing method. He mentions that in the river sector, the Ministry of Land grants the exclusive right of fishing by auction to the highest bidder for leases of one to three year's duration. The private lessee, who is usually a fish merchant or moneylender, negotiates with fishermen the right to fish on payment of cash rent or a share of the catch (sub-lease). Sometimes, the fishermen's cooperatives receive such leases at a negotiated rent based on average rental over the preceding three years. Ullah (1985) identified two other types of property rights over the different segments of River Jamuna: 'Debotter' properties and privately controlled water bodies. The 'debotter' properties are properties reserved to support worship of Hindu deities and are rent-free tenures. Privately owned water segments are 'maurasi jalkars' held in

perpetuity at a fixed rent and the ownership is passed on to the heirs of the original holders.

In the context of developing new management regimes for inland fisheries, Pokrant (1996) argues that

...a common property rights regime has some potential advantages for open capture fisheries in Bangladesh. These advantages include reduction of uncertainty of supply, greater efficiency through low administrative costs, a stronger sense of ownership and responsibility for the longer-term sustainability of the resource, a more flexible and adaptable system to meet local needs and a greater degree of legitimacy for the system as a whole. Without the security of property rights, there are dangers of escalating conflicts between fisher groups and between fishers and former lessees as the latter attempt to retain their control (Pokrant, 1996, p. 10-14).

Thompson's study (1999) on community based fisheries management (CBFM) also emphasized the benefits of CBFM. Such benefits include fishers cooperating in order to increase and conserve fish stocks; sharing the costs and benefits of improved management; managing effectively conflicts among themselves; enhanced position of organized fishers in dealing with stakeholders; sharing of data and understanding of the conditions of the fishery by the government and the fishers and the emergence of more effective and enforceable rules with a high level of acceptance by the different stakeholders. Thompson argues that the success of community management needs to recognise that fishers require time to develop fishery organizations or institutions, that 3 years, which is often the standard for fisheries leases in Bangladesh, is not enough for this, and that community management develops faster where there is a well-defined community and waterbody and few conflicts or factions within the community. He also suggests that any government or non-government intervention requires a focus on 'a visible conservation measure' such as a sanctuary or an improved production technology, as this allows fishers to work towards a specific and well-defined goal. Other suggestions include recognition of other 'stakeholder' interests in water bodies, revenue support from government, better liaison between levels of government and NGOs, dedicated local staff with some autonomy to make decisions, NGO

involvement in training and credit provision as a way of reducing dependence on money lenders.

Ahmed et al (2002) have dealt with the complexities of managing inland fisheries in Bangladesh, which they say makes it necessary to develop a more cooperative model between NGO's, fishing communities, government and research agencies to ensure success in managing the resources. In another study, Ahmed et al (1997) discussed four different models of such cooperation, which have evolved in Bangladesh. The first model is an NGO-led strategy to establish fishery rights for target groups in publicly owned water bodies. The second model reflects a government –led strategy to establish a direct relationship between the state and the users (fisher communities). The third strategy involves collaboration between government, NGOs and researchers working together with fishing communities. A fourth model involves fisher communities assuming true co-management responsibility and achieving partnership status with government, NGOs and research agencies.

While the studies mentioned above contribute to our understanding of the status of fisheries and their management issues, they are based on limited ethnographic materials and focus almost entirely on common property rights without locating them within the broader cultural and social context of the community under study. There is no single detailed ethnographic study on any of the inland open water fishing communities of Bangladesh, which addresses the relationship between common property rights and indigenous knowledge. Such a study is required as common property rights are in reality based on some formal and informal knowledge and practices. Property rights are reflected in their users' cultures, values and technology. For example, common property management draws on local skills of fishing, management and ecological knowledge. The next section reviews the literature on indigenous fishing knowledge and practices and how they relate to the management of inland open water common property fisheries.

2.7.Literature on Indigenous Knowledge in fishing

An area of inquiry separate from but closely linked to that of property rights regimes is the study of systems of indigenous knowledge. The term 'indigenous

knowledge' is broadly defined as the local knowledge held by indigenous peoples or local knowledge unique to a given culture or society, and is used here interchangeably with traditional knowledge, local ecological knowledge, indigenous technical knowledge (ITK), ethno-ecology, folk-knowledge, traditional environmental (or ecological) knowledge, or 'people's science'. From an anthropological perspective, the social and cultural context in which knowledge is generated and put to practical use is central to the discipline with its focus on the embeddedness of such knowledge in the personal, the specific and the contextual.

Also, the idea of fishers' indigenous knowledge implies that their knowledge is not only reflected in their actions but shapes their perceptions, beliefs and ideas through which they organise their fishing and fishing related activities and control their individual and collective behaviour in maintaining social solidarity.

This idea needs to be broadened to include the organisation of fishing, mode and techniques of production, formally and informally acquired fishing knowledge and wider notions of fishers' relations with the natural and supernatural worlds. It emphasises the hybrid, changing and adaptive nature of fishers' knowledge which is a product of the mixing of ideas and practices acquired formally and informally and technologies received from government agencies, non-governmental organizations and other bodies with locally derived fishing knowledge, cultural heritage and technologies (Ostrom, 1990, 1992; Sillitoe, 2002).

In general, indigenous fishing knowledge includes both material and non-material /spiritual aspects and the beliefs and rituals associated with them. Robben (1989, p.7), following Bourdieu (1977) and others, emphasises the practical activities through which people cope in the world and the ways they interpret and define them socially and culturally. The most crucial and defining quality of people is to be found not in what they think but in what they do and how they do what they do, namely, attending to everyday activities, tasks and demands of their social worlds. Robben also comments that fishers' knowledge is taken-for-granted, tacit and based on their:

‘...actions in supernatural, moral, ideological, or ecological context. It is not static and absolute, but dynamic and historical. What seems the most insightful assessment at one point may prove to be less than

perfect and complete in another context or at another time' (Robben, 1989).

Earlier models of development tended to ignore indigenous knowledge as backward and an obstacle to progress. However, Anthropology has always had a strong interest in what is now called indigenous knowledge as for a long period the study of so-called traditional societies was its main subject matter. For example, Anthropologists were often among the first to critically evaluate the claims of modernisation theorists that so-called 'tradition' was a primary obstacle to effective development (Gardner & Lewis, 1996).

In recent years, however, the state sector and NGOs in many countries, including Bangladesh, have moved from this modernization or anti-tradition paradigm towards a more positive acceptance of the utility of indigenous knowledge in the study of medicine and sustainable development (Ellen & Harris, 2001, 2003). In contrast with the global literature, interest in IK in Bangladesh fisheries has been limited and the few studies available are largely descriptive and do not take IK as a central topic for inquiry.

As part of the renewed interest in IK, there has been a growth in research on indigenous fishing knowledge. What such research shows is that indigenous fishing practices have often been developed over a long period of time, after much trial and error, and in many cases, fishers have a more comprehensive view of their fisheries and of how they should be managed than those fisheries managers whose perspectives, with a few exceptions, are drawn from limited local experiences and based more on de-contextualised biological and ichthyological scientific texts.

Many small-scale or artisanal fishing communities have developed a variety of fishing technologies and knowledge systems over the generations which have allowed them to exploit their locally available fisheries resources in a sustainable way. In addition, historically such communities were able to sustain their fishing resources as they used relatively simple technologies, did not engage in extensive trade and lived in communities and areas where population pressure on land and sea was low. Their fishing knowledge resulted from decades, even centuries, of close familiarity with specific aquatic environments where fishers through direct and

repeated activity and experience were able to ensure a regular and predictable supply of fish to meet their and other's needs. Such knowledge was rarely, if ever, written down or systematised into a set of fishing principles. The technologies required were of low cost, usually invented or developed locally, although there is evidence of the movement of fishing ideas and practices across communities and regions (Baland and Platteau, 1996; Berkes et al., 1994; Gadgil et al., 1993; Palsson, 1991; Ruddle, 1994).

As a set of practices aimed at wresting a living from aquatic environments, fishing is highly ritualised. In contrast to the land, which has been at least partially domesticated through agriculture, the river / sea has not been tamed or socialised to the same degree. Technology and skills cannot guarantee human safety in the waters, let alone some degree of predictability and periodicity in the relationships between labour and productivity in fishing. Under such conditions, rituals, defined as repetitive patterns of behaviour, which express and mediate a society's tensions and contradictions, are often prescribed as necessary to appease and invoke the spirit world to gain favour and protection from misfortune. Such rituals reflect the experiences of many generations of fishers at sea or on turbulent rivers where uncertain and unpredictable events happen. Fishing communities also have many beliefs and ritual practices which relate to other aspects of their fishing lives such as fish yields and fishing environments. All these rituals connect the material and the non-material.

Like many other communities, fishing peoples use and observe different types of rites and rituals on different occasions to assure themselves that they can bring about their desired objectives. According to Durkheim (1961), such rites and rituals are the symbolic expression of the identity and cohesion of the people of the society and help to preserve and perpetuate the values through which society continually expresses itself. In other words, such rituals reaffirm group membership and reinforce group solidarity. They also enable every member of the group to carry out their tasks with confidence in the face of uncertainty, risk and anxiety (Durkheim, 1961; Malinowski, 1960).

Sillitoe emphasises the spatially and contextually defined nature of IK, arguing that IK is embedded within its distinct geographical, ecological or socio-cultural contexts (Sillitoe, 1998b; IIRR1, 9996) which give it meaning and direction. For example, to get a good catch, fishers depend on their 'indigenous technical knowledge' (Sillitoe, 1998c) and experience and on supernatural forces for which they perform rituals and worship specific deities (see also Robben, 1989, pp. 3-4). A change of context or space or de-contextualization might result in a change in the status and meaning of knowledge and practices because each community situates its fishing strategies in a unique context of personal interest and cultural significance which represents what is important for it and gives directions to the community's choices in life (Robben, 1989).

Robben's (1989) study of Brazilian fishermen illustrates the cultural specificity and locally based practical wisdom of canoe fishermen. He mentions that the canoe fisherman who makes a sacrifice to 'Iemamja' (i.e. sea goddess) after the fishing trip and recites a spell to impair a colleague from catching fish, does not need to interpret its meaning consciously in order to complete the task. He has a practical wisdom, which demonstrates a situational understanding of his activities.

Robben also mentions that the regulation of fishing practices is greatly influenced by a sense of personal judgement developed through hands-on-experience which, for instance, allows a fisherman to maintain the right tension in a fishing line to secure a fish. Such practical wisdom is not effective if simply expressed in rules or principles but has to be acquired in practice through the everyday decisions fishers take, the acts they carry out or refuse to carry out, the emotions that move them, and the way in which they lead their lives or are forced to lead their lives.

A pioneer in the study of IK is Berkes whose 1999 study of the James Bay Cree Indian fishers provides a detailed understanding of local fishing practices which give important insights into the Cree fisheries management system. The first is about concentrating fishing effort on aggregations of fish. The second concerns rotational or pulse fishing. The third involves the use of a mix of gill net mesh sizes. The primary mechanism that drives all three management practices is the fishers' reading of the catch per unit of effort. It is the key environmental signal

monitored by the Cree: shaping decisions regarding what nets to use, how long to keep fishing, and when to relocate. But the Cree fishers monitor other environmental signals as well. They note the different species of fish in their nets, the size, the condition or fatness (considered very important as a signal of health), and the sex and reproductive condition of the fish. They also observe the fish and noted any unusual patterns in behaviour and distribution (Pp.117-121).

In many fishing communities, local knowledge and practices are distributed differently between men, women and children. In some communities, women have roles not only in fishing but also in trading fish, producing dry fish and making nets, while in other places they are included in the trawler fishing crew. Hornell (1950) gives several examples from around the world in which women are involved in many kinds of fishing operations.

Jackson (1983) gives a description of the indigenous knowledge of the Tokanoan fishing community of Northwest Amazonia. According to him, the Tokanoan fishers understand the habits of various fish species and can determine the seasonal and micro-ecological variations and especially the fishing prospects at different locations. They can also identify why yield differs substantially even on two sides of the same river. Jackson found that each man has his favourite fishing spot and this becomes familiar to his sons as they grow up.

P.H.Nikijuluw (1994) shows how in the Maluku Islands of Indonesia similar fisheries management measures have been employed for over a hundred years. Consisting of about 900 islands with more than 1000 coastal villages, the Maluku Islands make up one of Indonesia's 27 provinces. The two most common practices, *sasi* and *petuanang*, are based on indigenous environmental knowledge and awareness. For example, the people of the islands have a special type of fishing gear, which they use in the bay. By observing changes in wind, waves and temperature they can predict that on the following day there will be no fish in the bay. They can then switch to equipment, which is suitable for fishing outside the bay. Both 'sasi' and 'petuanang' are linked to religious customs; for example, the pastor and other religious leaders take an active part in 'sasi' ceremonies. The islanders pass on their knowledge of these management measures from one

generation to next. These indigenous approaches have proved successful in maintaining the exploitation of resources at a sustainable level, promoting village growth, and guaranteeing equitable catch distribution among villagers. As a result, there is always enough fish to meet the needs of everyone in the village.

Malinowski (1918, p.90) was one of the first anthropologists to provide an account of the role of ritual activities in fishing, focusing on ritual as a means of alleviating anxiety in the face of uncertainty. He showed how Trobriand fishers engaged in ritual acts as attempts to cope with dangers and uncertainties at sea and thus come to terms with nature. He argued that rituals and rites are not observed in professions in which profit is calculable and certain. In fishing, where the yield is abundant and there is no uncertainty and risk, there is little or no observance of rites.

Kalland (1994) argues that the devastating earthquakes, volcanoes, typhoons, landslides and floods have taught the Japanese people the power of natural forces. Nature has come to appear threatening to most Japanese. Like Malinowski, Kalland's study (1995) of Tokugawa Japan (1600-1868) revealed that fishing festivals were designed to relieve the fishermen from anxiety and to help them manipulate natural powers. Worship of Shinto deities had to be conducted in a state of purity to ward off misfortune. The Japanese preoccupation with purity and pollution affected the fishermen in other ways as well. The idea of female purity gave rise to a widespread taboo against women participating on fishing boats in Japan (Oto, 1963; Segawa 1963; Yoshida, 1981).

Fishing communities of Philippines have various ritual practices to deal with any unexplained sickness or misfortune in their expeditions, which they attribute to the 'Tawa sa dagat' (the people of the sea) whom they may have displeased or hurt. To remedy this, the fishers must offer rituals to the people of sea for their swift recovery during expeditions. These beliefs and practices provide a sense of security for fisher folk (Ushijima & Zayas, 1994).

Rituals and taboos practiced in fishing have different meanings in different fishing communities of different fishing environments. For example, in the coastal communities of Bantayan and Daang Bantayan in the Philippines, the 'harang' and the 'halad sa diwata' rituals are performed to thank the 'tawa sa dagat' for an

abundant catch, for the blessing of a new fishing vessel, for the anniversary of an older fishing vessel or for commemorating some past misfortune. Launching a new fishing vessel ('lusad sa dagat') is considered a major community event. On this occasion, the owner serves plenty of food and drinks. Such a ceremony, however, is confined to big commercial fishing vessels like the 'kobkob', 'basnig', or the 'hulbut-hulbot' and 'siper'. The smaller non-motorized fishing vessels are blessed or launched with the 'tuob' rituals. The 'harang' is usually held during a full moon. The blessing begins with the smashing of the 'vino' or locally produced wine (e.g. 'Tenduay Rhum', etc.) against the boat, after which a pig is butchered inside the boat, its blood smeared on the sides of the hull. The meat is cooked without salt. The 'mereko' (fisher's leader) then sails seaward with the family members and other guests. The 'mereko' begins to chant, invoking the grace and powers of the sea spirits while throwing small portion of food into the sea. Traditional fishers believe that this type of annual blessing of the fishing vessels will yield larger quantities of fish (Ushijima & Zayas, 1994).

Tvedten and Hersong (1992, p.150) mention that in Africa magic and rituals influence fishermen's behaviour and strategies both in their everyday work activities and in their relation to non-fishermen. Examples of the former are when specific fishing grounds are to be avoided, particular rituals are to be observed when going to and coming from the sea, when specific types of fish are to be avoided and when amulets or other objects are to be attached to boats in order to improve catches and avoid disasters. Relations with non-fishers involve conversion barriers related to exchange of fish, when people from specific social groups are banned from the occupation and avoidance rules in relation to women.

Several fishing peoples in India also have developed a network of ritualistic performances to satisfy the unknown powers, which are believed to control the various factors relating to success in fishing (Bavink, 2001; Pramanik, 1993; Ram, 1991). According to Ram (1991), Mukkuvar fishermen hold the belief that fish cannot be caught until they allow themselves to be trapped in fishing nets. This particular belief is the result of the development of a kind of fish worship. A number of specific rituals are connected with the boats, as these are the only means to fight the turbulent rivers during cyclones. During the fishermen's long absence

from home on fishing expeditions the womenfolk at home perform river worship or Ganga Ma. Beside this, they also observe various practices, including worship and fasting, in the hope of keeping their male partners free from danger and assuring their safe return from the river or sea. The popular novel by Kerala writer Thakazhi Sivesankara Pillai (1962), *Chemmeen*, draws on this theme emphasising that among Kerala fishers it is women, by their prayers and chastity, who bring the man home safe from the sea.

Ram (1991, p. 51) shows how Mukkuvar fishers depend on a ritualisation of their fishing technology in controlling certain environments of fishing. To the Mukkuvars, all the tools of trade, their fishing craft and gear, particularly prior to their first use at sea, must receive religious consecration. Parish priests pray over the craft, and offer the insurance of divine blessings for the future luck and safety of the craft. Individuals in fishing villages who claim some knowledge of Hindu 'mantra vaadam', described by a practitioner as the juggling of sounds or 'aksharam' said to have begun with the origin of the world itself, are able to exchange their knowledge for a share in the fishing catch. By utilising their 'mantram' to attract fish into nets (and also deflect fish out of the nets of the rivals) these men collect five per cent of the total catch from the crew they have helped. Significantly, the type of fishing where magic is used most frequently is the 'KaramaDi' or beach-seine, precisely where human skills and expertise are least related to predictable levels of productivity (Ram, 1991, pp. 50-51). Ram found that many of the fishing rituals are related to fisher women and girls. Mukkuvars believe that wrongful conduct on the part of women may be responsible for the failure of economic ventures at sea, and may be regarded as putting at risk the safety and welfare of the men themselves (Ram, 1991: 51).

These example shows that fishing knowledge and practices are embedded within local cultural contexts, which give meaning to, and practical guidelines for, successful fishing outcomes. Such contexts often do not draw any categorical distinction between the worlds of humans and non-humans and may indeed attribute human qualities to aspects of the natural world. For example, Ushijima and Zayas (1994) in their Philippino fisher's study show that religious observance of rituals and practices are ways of dealing with supernatural beings and of coping

with the unexpected. Some Filipino fisher communities attribute unexplained sicknesses or misfortune when fishing to the ‘Tawa sa dagat’ (the people of the sea) whom they may have displeased or hurt and offer rituals for their swift recovery during expeditions. Pramanik’s (1993) study on the coastal fishing community of West Bengal in India identified that in the past, but also in the recent times, people observed magico-religious rites on different solemn occasions (Pramanik, 1993). All these practices contain technical and religious components which fishers regard as mutually constitutive rather than as two ontologically separate spheres of reality.

As noted earlier, IK is neither timeless nor static. For example, Bavinck’s (2001) study of the Coromandel Coast fishing community of Tamil Nadu describes how traditional artisanal fishing communities of Tamil Nadu are incorporating new technologies in modification of their traditional fishing crafts (fishing nets and boats) and discusses the issue of conflicts and cohesions which exists in their technical innovations and motorisation of artisanal fishing crafts. His study also deals with the myths and realities in regulating the common pool marine fisheries resources in Tamil Nadu. As chapter ...shows, Krishnapur fishers have their own kinds of ‘ecological’ knowledge on fish movements, diseases, seasonal changes, water flows and fish habitats as well as particular beliefs and ritual practices which underpin and giving meaning to their fishing activities. However, as discussed in section 2.7 below, there are no detailed ethnographic studies of fishers’ IK in Bangladesh.

2.8. Bangladesh studies of IK in fishing

The discussion and examples above indicate the rich materials available on IK in general and within fishing communities globally. Such material has considerable relevance to the present study as academic and policy interest in IK among students of Bangladesh is quite recent. As noted earlier, there are no detailed ethnographic studies which take IK as a central theme. What we have are several works which mention types of fishing gear, religious practices, the cultural significance of fish in Bengali life and the like. These works give little explicit theoretical attention to indigenous knowledge and fishing practices and their relations with sustainable fisheries development. However, there are some development-oriented, technical

and economic studies which provide detailed empirical descriptions of fishing practices, methods and fish production methods. Among the most important of these studies are Alam (1998) on two fishing communities of Bangladesh, Jansen's study (1987) of Noakhali fishers, Hora's (1948) study of ancient Hindu views on fish and fisheries, Das's work (1931) on the cultural significance of fish in Bengal, Feldman's (1982) study of marine fishing families, Islam, Reihlen and Thompson's (2000) pilot study of IK among fishers, and the work of Mazumder et al. (2000) on fresh water fisheries and sustainability.

One of the few ethnographic studies of inland fishers that examined the impact of natural and human-made changes on local fishing practices is that of Khurshed Alam (1998) who studied two different fishing communities in Chittagang and Patuakhali. The study looked at issues such as how fishers were affected by changes in and outside the village, how the fishing populations reacted to the changes and how they coped with new situations. He also described the differences in fishing practices between the two fishing villages, drawing on several social, economic and political perspectives to frame the analysis.

Mahbub Alam's (2001) study of traditional Hindu fishers of Charan Lake, while not specifically concerned with IK, describes how fishers cope with the wider society and what barriers they face in getting access to local fishing rights. He shows that changing rules imposed by the state in different periods has affected local people's access to fishing grounds and the ways in which these fishers have attempted to devise new ways of dealing with such change through fisher's cooperatives or other social bodies. Alam's study illustrates how blurred the boundaries can be between IK and property rights.

Mazumder et al. (2000) discuss the use of a variety of fishing gears in Bengal and the technology and knowledge the fishing people developed over generations. They argue that detrimental changes have occurred through outside intervention, which ignored the indigenous knowledge and experience of fishers. Ahmed et al. (2004) provide detailed descriptions of fishing gear (gill nets, seine nets, lift nets, set bag nets, cast net, spears, long line and hooks) used by the fishers of the Titas floodplain area of Brahmanbaria and discuss in which season fishers use what type of gears to

catch certain specific species of fish matching with the lunar cycle/ lunar periodicity (full moon & new moon).

Sillitoe (2002) and Huq and Rahman (1994) mention that fishing people who generally have little or no formal education, possess a considerable body of knowledge embedded in local cultural traditions. Such knowledge has emerged over time and been shaped by natural environmental changes such as the annual monsoon floods, development policies and interventions such as building flood refuge embankments, local political power struggles, and other wider social changes which blend into cultural change. Fishers have not been passive recipients of change but have wanted to improve their technologies and practices.

2.9. Conclusion

To conclude, the general and Bangladesh literature on property rights and IK shows that there is considerable social and cultural diversity in the ways in which fishers manage their resources and the kinds of knowledge and practices they have developed sometimes over centuries. The review also reveals that in the face of major technological, organizational and environmental changes, traditional fisheries have become more diversified; traditional fishing methods have been consolidated and transformed as fishers, in their continuing struggle for survival, have made room for innovations. In particular, many fishing communities have drawn on their local knowledge and practices, often in a changed or modified form, to deal with new and sometimes threatening circumstances. Such knowledge and practices have incorporated changed notions of the most effective forms of property rights. However, despite the close connection between IK and property rights regimes, there has been less interest in explicitly linking the two.

The remainder of the thesis focuses on property rights and IK in the Bangladesh context, paying particular attention to the Koibortta of Kishoreganj District. The next chapter examines fisheries management in Bangladesh since 1793 when the British introduced the zamindari system which changed the legal status of many water bodies in what was then undivided Bengal.

CHAPTER THREE

Common property rights, common property fisheries resources and management regimes in Bangladesh



Figure 3.1: Bengla Lake surrounded for fishing by leaseholders

3.1.Overview

This chapter discusses the changing role nature of property rights in fishing over a 200 year period followed by a general description of inland fisheries management in present-day Bangladesh. The general issues raised in the chapter are of particular relevance to Bangladesh as there has been a growing academic and policy interest in the role of common property rights in the management of Bangladesh's common pool resources such as forests and fisheries. Bangladesh, which has one of the world's most diverse inland fishing environments, has a long history of conflict among different groups regarding access to common pool resources.

3.2.CPR and management regimes in inland open water fisheries of Bangladesh: from 1793 to 2000

From British period to present day Bangladesh, a number of fisheries policies, regulations and acts were introduced for the management of waterbodies and other fisheries resources (see table-3.1 and appendix 3.1). Prior to 1757, fishers and farmers of Bengal had customary rights¹ over open water fisheries including rivers, land depressions, lakes and oxbow lakes and the floodplains. At that time, fisheries were managed by the local fishing community as common property under various systems of tenure. During the early stages of British administration, fishers had the same customary rights over all water bodies. However, the Permanent Settlement gave the landlords (zamindars) rights not only to cultivated land but also:

...all the remaining varieties of land, i.e., pasture, forest, wasteland, marketplace, fishery, ferry, road, etc. were also declared to be private property of one social class, the zamindars, in disregard of the other classes' customary rights in them (Nakazato, 1994: 224).

In other words, the land settlement provided a means whereby any usufructuary rights farmers and fishers may have had in the commons could be undermined. It is still unclear how extensive such rights were in pre-British times although, in the case of fisheries, there is evidence that they had some. For example, in some districts the agricultural population, including fishers, could fish freely with rod and line in certain lakes and could use hand nets in navigable rivers and lakes on particular days (Nakazato, 1994:226-227). Also, during the monsoon season, paddy fields were inundated with water and peasants took the opportunity to fish a dispersed fishing stock which was unprofitable to zamindars, lessess (ijaradars) and professional fishers. This was a central source of protein to the peasant population, although it was insufficient to cover entirely their needs. Nakazato (1994: 229) argues that the persistence of the peasantry's customary right to fish is partly explained by the seasonal division of labour between a dry season during which time most professional fishing took place and wet season when the peasant population had time on their hands and used part of it for fishing

Several other commentators have noted that during British times a normal tax (*kor*) was collected from fishers in exchange for use rights (Ahmed, Capistrado & Hossain, 1997; Ali, 1992; Huq, 1998, Pokrant, Reeves, McGuire, 1997; Toufique, 1995,

1996). Pokrant et al. (1996) mention that during this period, zamindars leased out their water bodies to lessees who were usually drawn from local non-fishing rural elites. These lessees either sub-leased their fisheries to the fishers or entered into a share contract with them or employed fishers for a wage.

It is important to note that inland fisheries, especially the floodplains, were historically connected to different water bodies. During pre-British and British times, the main rivers, where the Hindu caste fishermen dominated in the past, were subject to some control by the fishing communities themselves under various informal arrangements, particularly during the dry season when monsoon water levels dropped, allowing a clearer demarcation of fishing territories. However, on sections of rivers and lakes, local landlords (zamindars and jotedars) reserved their rights of access to the deepest and most productive parts of the water bodies and fishers were required to pay a fairly nominal fee for access. Often this fee was given in the form of a present (salami) of a portion of the finest fish of the catch to the landlords. In some places competition for particularly rich fishing grounds was fierce both between fishing communities and landlords. In some instances, landowners often had minimum control over water bodies and fishers (especially the wealthier ones) operated under the patronage of particular landlords. The number of people competing for the resource was therefore limited. Seasonal and subsistence fishers existed but in small numbers and fish resources were abundant enough to cater for all (FAP-17, 1994).

The state itself was directly involved in regulating water-tax rights through the ownership of particular types of water bodies, namely, navigable rivers, estuaries, certain forest zones, such as the Sundarbans, and other water bodies. As noted earlier, many other water bodies were owned by landlords and other members of local elites and fishers increasingly had to pay for lease rights. In the case of navigable rivers, the public was allowed to fish in and to navigate rivers, but this right was subject to the state's higher right to lease out fisheries. Such leasing was the subject of a number of court cases throughout the colonial period (see Pokrant, Reeves and McGuire, 1996).

Hence during the 19th and 20th centuries, the colonial state created a legal and regulatory framework which favoured landlords and leaseholders who were drawn largely from non-fishing classes and groups and who increasingly saw their water tax rights as valuable commercial and financial assets that needed to be protected from unauthorized fishers. The fishers had to come to some arrangements with them in order to survive (see Chu-fa-Tsai & Ali, 1997, p. 40).

Table 3.1: Summary of major policies and legal issues related to aquatic environment and aquatic resources: 1950-1996

Leasing policy tenure	Leasing policy details
1950-1965	Open auction leasing of water bodies where highest bidder is granted lease. The method of fixing minimum revenue prior to auction was to average the last three terms lease value than to increase it by 10 %. In fixing the lease value the productivity of the fishery was not considered.
1965-1973	Preference was given to registered fishers cooperatives in leasing out the water bodies provided the cooperatives agreed to pay the highest bid money.
1973-1984	Restriction placed on leasing out water bodies to registered fisher cooperative societies through negotiation for 1-year lease for river and canal and 3-year lease for closed/semi closed type of fisheries such as lake, <i>baor</i> and ponds (<i>pukur</i>). If such a fisher association was not available or the terms and conditions of lease were not acceptable to the government then the water bodies would be put up for open auction where anybody including non-fishers could bid.
1984-1986	Leasing to the fishers cooperative societies through negotiation was replaced by open auction system but limited to fishers cooperative societies. Open auction system of leasing water bodies was subsequently changed to bidding by sealed tender system, all other conditions and norms remaining unchanged. All closed Jolmohols of up to 20 acres (8 ha) were transferred to Upazila Parishad (local Government) for management and were transferred again in 1997 to the Ministry of Youth and Sports.
1986-1995/6	To ensure biological management of fisheries resources and to establish the right of fishers to water bodies a licensing system introduced under the New Fisheries Management Policy (NFMP) in 1986 in selected locations, but this had limited success and ended in 1996 since when project-based approaches involving communities have been adopted.
1995/6-	Leasing system for flowing rivers was abolished and fishing was declared open to all free of cost except to those who catch fish by using mechanized boats. The policy was established for the benefit of the poor fishers but as there was no control, fishing pressure increased greatly and threatened fish stocks. Additionally influential people and <i>mastans</i> (musclemen) were reported as controlling the rights to river water bodies in some areas and to have harassed and exploited fishers.

Source: Adapted from Ali et al. 2003

After the partition of India in 1947, the new state of Pakistan abolished the *zamindari* system in 1950 and took control of waterways through the “State Acquisition and

Tenancy Act of 1950". The Ministry of Lands managed the water bodies by leasing fishing rights for one to three years to the highest bidder, a private or corporate entity, who thereby acquired exclusive rights to determine fishing access to the water body. It led to a shift in control from Hindu landlords to newly emerged Muslim political elites and economically influential people as the leaseholders of these water bodies. The leaseholders allowed as many fishermen as possible to collect as much rent as possible during the tenure of their leases. Through this system, traditional Hindu fishermen lost significant user rights as Bengali Muslim fishermen had better access to local power brokers (Pomeroy 2001).

The central aim of the leasing policy was to raise state revenue. The shift from the zamindari system to state ownership in the post-colonial period did little to weaken non-fisher control. From 1950 to 1965, anybody could participate in the auction to bid for the lease of a waterbody, which involved many rich and influential leaseholders. But in the mid 1960s, with pressure from fishers' organizations, the Board of Revenue restricted leasing to the highest bidder among fisher cooperatives in order to assist poorer fishers.

After the independence of Bangladesh, the Government of Bangladesh decided to restrict waterbody auctions only to registered fisher's cooperatives but this intensified non-fisher control of co-operatives by wealthy traders, leaseholders and others. Due to a lack of capital and to control of local political authorities by non-fisher interest groups, fishers were outbid or their cooperatives were controlled by outside financiers (see Pokrant 1996, Toufique 1996, 1997 & 1998). Sometimes, local non-fisher elites who did not get support from the fishermen cooperatives formed a fake fishers' cooperative. They also tried to divide the fisher communities by making informal agreements with a small section of opportunist fishers to establish their control over fisheries resources.

In 1979, during the tenure of President Ziaur Rahman, all the waterbodies were transferred from the Ministry of Land to the Ministry of Fisheries. But from 1979 to 1983, the Fisheries Ministry did not lease out waterbodies to the actual fishermen or their cooperatives but leased them to selected individuals. In 1983, due to the failure

of the Fisheries Ministry to manage waterbodies successfully, President Ershad returned all these waterbodies to the Ministry of Land and in 1986/87 a New Fisheries Management Policy (NFMP) was introduced. In March 1987, under pressure from the Jatiya Matsyajeebee Samity (National Fishers' Association), the Government granted 10 waterbodies to local fishers associations for community based management. In a gazette notification on 7/1/1988 (Bengali years 1396 and 1397), the government handed over 140 and 150 waterbodies respectively to the fishers' associations. In order to protect the interests of the poor fishing community from the exploitative influences of leaseholders and moneylenders under the open auction system and to ensure the biological management of the fishery, the NFMP's (New Fisheries Management Policy) aim was to reserve some water bodies for what were referred to as 'genuine' fishermen defined as those who depended on full-time fishing for their livelihood. Under this new system, the leasing system was abolished and fishing rights were directly licensed to fishers. Licensees were expected to obey and enforce rules and regulations. Annual gear-specific licenses were introduced to ease the pressure on fisheries by regulating harvests. Limited user rights to genuine fishermen were meant to ensure that they received a greater share of the fishing income (Ahmed et al. 1997).

NFMP operated in a selected number of fisheries and enjoyed some successes. However, several problems became apparent. Fishers sometimes failed to pay license fees on time and there was a poor revenue return to the government compared with the leasing system. Non-fishers continued to control water bodies, assisted by wealthier fishers. There was a failure to link license fees to the productivity and biological potential of the water bodies, which meant that for many fishers license fees were too high and increased yearly which over time put them out of the reach of many.

Critics of the NFMP argued that it failed to achieve its goals due to a lack of fishers' technical support from the fisheries department, a lack of financial support from the government and non-governmental financial institutions, (fishers were denied loans from banks and most had to rely on moneylenders), lack of security to protect their fish resources, conflicts between the traditional fishers and new fishers, and

continuous threats from other interest groups. Despite these problems, to date the NFMP has been the only significant government effort to organise the interests of traditional fishers.

In 1991, the new BNP government abolished the NFMP and some water bodies were returned to open access while others were given over to open auction leasing as an initiative to raise revenue through increasing the rental payments. According to the new rule, tendering was restricted to the fisher's co-operatives and the lease of the waterbodies had to be settled within the fisher's co-operatives. However, in 1995, the BNP government again declared all the open water bodies as open for everybody and abolished the leasing system. In 2001, the present government made a small change to its management policy and gave 33 waterbodies (20 closed and 13 open-water fisheries) to the National Fishers Association for community management on a trial basis.

In summary, from the late 18th century to the present, Bangladesh's inland fisheries management has been dominated by private leasing and controlled by non-fishers business and political elites. Most of the policies and rules instituted during this period led to a transfer of property rights from traditional fishers to the socially powerful agents, the leasees, and other commercial non-fishers interests (Pokrant, 1996; Toufique, 1997, 1998).

3.3. Fisheries management bodies and leasing practices in inland open water fisheries in present-day Bangladesh

To facilitate the leasing process, rivers and its tributaries are divided by the Ministry of Land (MOL) into several small arbitrary segments. These segments or waterbodies are then leased out through auction for the collection of revenue. Similarly land depressions and ponds owned by the government fall under this category. There are over 10,000 waterbodies (inland water bodies generating government revenue) in Bangladesh (Viswanathan et al., 2002 & table: 3.2) and they are leased to the highest bidder with a preference for fisher cooperatives but very often, either directly or by bidding through a cooperative, control ends in the hands of the rich and influential lessees. Due to the private auction leasing system, fisher's access to inland fisheries

has become increasingly difficult and competition over the fisheries resources is becoming more intense and complex every year. Today, there are several groups involved in fishing or fishing related activities in inland open waters of Bangladesh and they include the traditional caste fishers (mostly Hindus), non-traditional fishers (who entered fishing later), the leaseholders of waterbodies (who are mostly non-fishers), and the general fishers (members of the public) who catch fish occasionally for their own family consumption (Blanchet, 1993).

In Bangladesh, there is no statutory provision regarding inland open water fishery management. Rather, the government makes rules, policy, guidelines and circulars and so on and in this way regulates the open water fisheries. The Ministry of Land in one of its memoranda (number-Bhum/7/5/91/424(12) of 12th Sept.1991) states that management of all open water fisheries remains vested in the Ministry of Land.

Table 3.2: Distribution of fisheries/ waterbodies by category in Bangladesh

Category of fishery	Number of waterbodies
Rivers	2,013
Canals	1,924
Lakes (depressions)	3,528
Ox-Bow Lakes	162
Ponds	1,632
Others (unclassified)	860
Total	10,119

Source: Annual report of DOF activities 1985.

However, the revenue from such fisheries is treated as the income of sub-district, and distributed to different sub-district on the basis of area and population (Farooque, 1997). Many of the sections of the rivers are now under open access while a majority of the waterbodies connected to the open water fisheries of the rivers are still subject to formal leasing arrangements. In practice, many of these open water fisheries are considered as closed water bodies and are leased out with only a very small part of open fisheries kept open for commons' fishing, mostly controlled by the leaseholders of the nearby water bodies or other local political and non-political elites. Poor fishers have little direct access to these open fisheries. The large size of the areas leased means that single parties or organizations are unlikely to carry out fishing

activities directly but sub-lease areas to second parties. Most of the major leases on main rivers are at least nominally assigned to fishermen cooperatives. Access to these river fisheries is usually in the form of a fixed fee to be paid for the use of particular fishing equipment during a set time period (FAP-17, 1994, p. 67).

Generally two sets of people are able to lay some claim to fisheries resources in the inland water bodies including the rivers and the floodplains. Leaseholders who have rights to some part of the floodplains or a lakes located in the floodplains, may restrict fishing not only in the waterbodies area, but also in the floodplains around it as they regard any fish in their lakes as “theirs”. Landowners may claim similar rights over floodplain areas surrounding their landholdings, particularly if they have *kua* or submersible ponds where fish concentrate at the end of the flood season (FAP-17, 1994, pp. 70-71). Most areas other than lakes have generally been regarded as open-access for fishing as long as they are under water. Some canals or other particularly deep sections of floodplains or even areas specifically excavated by landowners in the floodplain to concentrate fish may have various forms of restriction placed on them. But usually restrictions are only applied when boundaries can be distinguished above the floodwaters. Generally it is accepted that flooded land is open to all for fishing as long as no boundaries or other means of ownership can be distinguished (FAP-17, 1994).

In Bangladesh today, three systems of management of open capture fisheries are practised on state-owned water bodies: private leasing to cooperatives and private individuals under the Ministry of Land (MOL); licensing of individual fishers through the JMS (Jatiya Matsyajibi Samity) under the Department of Fisheries (DOF); and open access under the supervision of District Commissioners. In addition, there is private ownership of coastal shrimp farms (ghers) and many inland ponds (some of which are used for fresh water aquaculture) and in some parts of the inland flood plains.

The two main state organizations involved in fisheries sector management and development are the Ministry of Fisheries and Livestock (MOFL) and the Ministry of Land (MOL). Under the Ministry of Fisheries and Livestock, there are four state level

fisheries bodies with responsibility for fisheries related administration, research and development activities. They are the Directorate of Fisheries (DOF), Bangladesh Fisheries Development Corporation (BFDC), Bangladesh Fisheries Research Institute (BFRI) and Marine Fisheries Academy (MFA). Among these four, DOF is the largest and is responsible for management and conservation of fisheries resources, enforcement of fisheries rules and regulations, extension of aquaculture and fisheries management technology through training, demonstration and motivation, execution of development projects, quality control of fish and fish products for home consumption and export. On the other hand, Deputy Commissioner of Land and the District Administration, together with the Upazila administration, work under the MOL as it controls all public water bodies such as rivers, lakes, ox-bow lakes, Government owned ponds etc. Other than these two, there are a number of state central and local organizations and institutions involved in the fisheries sector, including the Ministry of Youth and Sports (MOYS), Ministry of Water Resources (MWR), Ministry of Local Government, Rural Development and Cooperatives, Ministry of Industry, Ministry of Commerce, Ministry of Shipping, Ministry of Finance, Ministry of Education, Ministry of Forest and Environment, Planning Commission, Banks, Fishers Cooperative Societies/ Fishers Organization, and other Community Based Organizations (Ali et al., 2003) (Table: 3.3 & Appendix 3.2).

A tender committee, consisting of the Deputy Commissioner of the district (chairman), Additional Commissioner Revenue (member), District Fisheries Officer (member), District Cooperative Officer (member), and the Revenue Deputy Collector (member secretary), works in every district for the purpose of settling leases of these fisheries or waterbodies and implementing leasing arrangements through a number of circulars (see appendix: 3.3).

The Additional District Commissioner is generally responsible for leasing water bodies of 20 acres or more, provided the ministry has not placed an injunction on them. In practice, smaller water bodies are also leased at district level. This is done by lumping together several small lakes and creating a group fishery totalling 20 acres or more. In the name of better management, the district authority takes over a resource, which would otherwise be leased at the Upazila level or remain freely

accessible to the villagers. Water bodies, which are not leased at district level, can be leased by the Upazila Nirbahi Officer (UNO) provided the price is not below 5,000 taka and the size is not below 3 acres. Here small lakes are also regrouped to make larger waterbodies. The two criteria of lease price and the size of waterbodies make it possible to auction small water bodies which were not leased in the past, thus removing from villagers a resource to which they previously had free access.

Table 3.3: Major responsible bodies for the management of fisheries

Levels		Actors	Responsibilities
Macro	National	MOFL	Formulate policy and planning for fisheries management, resource conservation and development
		DOF	Assist MOFL in policy formulation and planning in technical aspects, plan for execution of the activities, guide, supervise monitor and evaluate
		MOL	Policy and planning, lease management of water bodies above 20 acres.
		MOYS	Policy and planning for management of closed type of water bodies below 20 acres.
		MOFE	Policy and planning for forest resources management and conservation, and protection and conservation of environment management
MESO	Division	Divisional Deputy Director	Supervision, monitoring, advising, enforcement of law
	District	District Fisheries officer	Supervision, monitoring, advising, enforcement of law
		Deputy Commissioner	Leasing Joalmohol and collection of revenue
		Divisional Forest Officer	Supervision, monitoring, management of fisheries resources in the Sundarbans Forest
Micro	Upazila	Upazila Fisheries Officer Asstt. Fishery Officer Upazila Youth Development Officer	Enforce Fish Act and Laws and extension activities
		Chairman/UNO, Upazila Parishad	Coordinating lease of small Jolmohals placed under the Ministry of Youth and <i>Joalmohol</i> manage under NFMP
		Forest Ranger	Issue permits for fishing in Sunderland forest area and collect revenue
		Fishers Organization/ Samities NGO	Motivate and organize the fisher for capacity building to establish fisher rights, and bargain for the interest of fishers community
		Chairman, Union Parishad	Management of khas water body up to 3 acres as common property resources

Source: Adapted from Ali et al. 2003

The Ministry of Land leases out defined water areas through auctions for varying periods and against the payment of a lease fee to private entrepreneurs (one to three years lease period), local co-operatives (up to five years), and government agencies (for longer periods, up to 30 years). Leasing of fishing grounds for a restricted term (one or three years) depends on local circumstances. The respective Ministries through their local bodies make a prior fixation of the bid value before putting the water bodies up for public bidding through open auctions. Lease periods are for 3 years for closed water bodies. The minimum lease value for a fishery is fixed by adding 25% to the average of the last 3 lease term values and then an additional 10% increase every year.

In 1984, the management of all closed waterbodies of up to 20 acres (8 ha) was transferred to the Upazila Parishad (local Government) and was transferred again in 1997 to the Ministry of Youth and Sports. Although the intention of the leasing policy is to favour fishing communities, in most cases fishers have limited access because their poverty, poor organization and the influence of powerful groups prevents them from bidding effectively for leases. Generally it is laid down in the circular that initially tenders are restricted to the Fishermen Cooperative Societies but if the offered lease is not at least 25% higher than in the previous year, new tenders are invited, and this time anybody- an individual or an organization- is entitled to make an offer.

In almost every case, the bids are undervalued and usually obtained by politically or economically influential people who maintain a close link with government agencies or personnel in the area. Base leases are kept low in order to restrict access to the auction to genuine fishers but powerful people sometimes form fake cooperative societies to secure the lease of a waterbodies or pay the lease money on behalf of the society and control the fishery, with the fishers working either on a contract/share basis or as labourers (Ali et al., 2003). Leases are usually for one to three years (recently extended in some cases to six years), which encourage a resource mining mentality (FAP 6, 1993) and reduce the incentive to conserve fish stocks. The leasing

system is subject to much political manipulation and a considerable proportion of revenue is lost through local level corruption (see Pokrant, 1997).

Many of the leaseholders in the study area claim that no lease is obtained without bribe or 'salami' whether the applicant is an NGO, a fishermen's co-operative, or a member of the public. A waterbody officially leased for tk.500 may cost the leaseholder tk.1, 000 in bribe. The lower the lease price, the higher may be the bribe; such is often the understanding between the parties concerned. The leasing system, as it operates now, serves the interests of both civil servants and leaseholders at the expense of fishermen and state revenue. Moreover, a number of studies demonstrate that the leasing system encourages over fishing and a mentality to treat a public resources as personal property to be exploited to the maximum for quick profits (Blanchet, 1993, pp. 5-6). The actual fishermen either individually or in a group are rarely lucky enough to secure any of the bids. However, the task of actually harvesting fish resources is left to poor fishermen.

3.4.CPR, leasing practices and fisher's livelihoods

Over the years, the state has recognized that state owned resources must be used to address the prevailing inequalities in rural areas. Thus, in 1971, the fishing communities were organized into co-operative societies and were given the exclusive opportunity to make the first bid at auctions of waterbodies. However, certain features built into this have made it practically impossible for the state to achieve its distributive goal. In particular, the automatic rise in base lease fees by 25% from one lease period to another have led to the displacement of the fishing communities from the market. Only by borrowing increasingly larger sums of money from local *mohajon* and, therefore, surrendering effective control to the lender, have fishing communities been able to maintain a nominal title to access rights. In reality, the leaseholders usually approach the fishing community and acquire the right to use their names in order to obtain leases. Due to the lack of effective and reliable sources of institutional credit, few fishers have been able to obtain fishing rights. Since most of the cooperatives are disorganized with no proper leadership and a lack of sufficient financial resources to compete with wealthy intermediaries, successful

bidders in public auction are often non-fisher middlemen who then establish an extensive network of sub lessees. Fishermen in need of fishing grounds are required to pay these sub-leasing agents to obtain access. As fishermen neither have a stable nor strong flow of financial resources, they must secure fishing rights through other arrangements with the lessee/sub-lessee, such as catch sharing, paying toll/rent (in terms of types and size of gear), or as working labourers.

Fishers' access to fisheries varies according to seasons. For example, in Krishnapur during the monsoon the land depression totally flooded and looks like a vast sea with small outcrops of villages above the water. When land depression and river boundaries are submerged, fish is a god-given resource and can be legally caught by any one who has a boat and net. The leaseholders are said to have rights over the water bodies they rent close to the land depression and up to 200 meters beyond. At the most, this represents not more than 10 per cent of the land depression's surface. However, Blanchet (1993), in her study of Shaneer Tangua, Matian and other deep land depressions, reports that actual practice differs from the text of the law. The powerful leaseholders of waterbodies claim ownership over all fish at all times of the year. Since the mid eighties they have forced the fishermen to buy fishing rights from them during the monsoon and they have forbidden the use of fishing nets. The so-called "tickets" they issue only allow the use of fishing hooks. She further mentions that in 1992, during the months of June and July, some 150 boats and in the months of September-November some 500 boats bought monthly 'tickets' for 1000 taka each. Leaseholders' private police repeatedly harassed the fishers who did not buy 'tickets' (the majority) and even those who bought tickets but used forbidden gears. Blanchet further mentions that the entrepreneurs who lease the largest waterbodies are not fishermen. They are based in district or Upazila towns where they have access to capital.

In spite of such constraints, the monsoon is a relatively less restricted period than the dry season for all part-time and full-time, professional and non-professional fishermen. Local fishers and the general public have a very restricted access to the fish resources during the dry season and their catch and profits are lower than during the monsoon. Traditional fishers who carry the historical burden of a low caste

identity do not dare to challenge the powerful leaseholders. Confrontations with the leaseholders' police, which led to confiscation of boats and fishing gears, beating, and arrest, are more frequent during the dry season and these police are the object of public resentment and anger, especially amongst poor non-traditional fishermen (Blanchet, 1993, p. 4).

3.5. Property rights, management issue and social conflicts in Bangladesh fisheries

The underlying causes of nearly all fisheries conflicts are related to access to and allocation of resources. Unfair competition for control and access to fisheries resources, and unjust allocation of the fisheries resources to politically and economically well-connected interest groups have led to conflicts in many of the fisheries of Bangladesh. With a range of state organizations and bodies responsible for leasing and managing different types of inland open water fisheries and with the involvement of several interest groups with different political and economic goals, objectives and interests, a complex and conflict-prone situation exists in fisheries. Political rivalry, fake and false court cases against fishers, physical assault and other forms of attacks are central to these conflicts. To give two examples, political rivalries take place between members of political parties with support at the local level. Fisheries are often one of the 'prizes' of such rivalries as politicians seek to cement their power in the local community. Different government departments also compete for bureaucratic control over natural resources, including fisheries. For example, the Ministry of Land is one of the most powerful ministries in the government and has been able to main control over the revenue-raising opportunities from fishing bodies, often against the wishes of weaker ministries and departments such as fisheries, forests and environment.

In the wetland region of Bangladesh, including the present study area, thousands of traditional fishers finds it increasingly difficult to sell their catch at a fair price and armed criminals and dacoits loot their catches. In many instances, they are threatened, physically assaulted and injured, and sometimes killed (Mallick, 2003). Major conflicts occur when villagers decide to fight back to protect what they see as their customary rights. The heightened tensions between fishers and the state occurred

after the government's decision to lease inland open water common property fisheries through public auction, which transferred common property fisheries resources from the traditional fishing community to non-fishing political elites. Government officials from the Ministry of Land and the Ministry of Fisheries and Livestock argued that the fishers indiscriminately exploit the fish resources, as they are under open access as common property resources, echoing Hardin's claim of the "tragedy of the commons". However, the fishing community of Bangladesh under the leadership of its National Association countered that they had fished all their lives as did their fathers and their fathers that they were able to protect their fisheries resources and that if anyone had the right to fish it was they. They also rejected the idea of a "tragedy of the commons" and demanded that poor professional fishers who were forced to fish indiscriminately during the fish breeding and growing periods to survive should be supported by offering alternative employment opportunities or receive financial support to cope with economic hardship during fish breeding and growing periods.

There are many newspaper reports of violent clashes in the inland fisheries, in which fishers are usually the victims. The national daily *The Daily Janakantha* (January 7, 2001) reported a number of bloody clashes against fishers in the lakes and land depressions of greater Sylhet and Mymensingh in the north and northeast. At least 200 fishers lost their lives and another 2000 were injured in different violent conflicts in the region since the late 1980s. The *Dainik Ittefaq* (23 September 2001), a prominent national Bengali newspaper, published a report on the hardships faced by fishers in the northeast. It reported many incidents of armed violence, gun fighting and false court cases against the fishers by influential non-fishers including lessees and dishonest government officials. The *Daily Ittefaq* (15 August 2001) reported that violent conflicts had occurred in Meherpur, a Northwestern region of the country. The report says that 115 local fishers had obtained a lease of 103 acres of a government water body (Khas land) for fish culture for several years but in August 2001, influential non-fishers and men working for the local power elites obstructed the fish culture. They placed bamboo poles across the water body, secured about 50 acres of land illegally with the help of hired gangs and started catching fish. When

the poor fishers came to protest, armed men hired by the illegal occupants injured many of them².

According to existing laws, 'genuine' fishers were to be awarded the rights of catching fish in the lakes and land depressions through lease and licensing by the relevant local government departments and ministries. However, of 2000 water bodies in 32 sub-districts of the 6 districts in the region, not a single one was under the control of a genuine fishing community. Many false and fake fishers' associations, having connections with prominent national and local politicians and others, controlled many of these fisheries and often threatened those fishers who opposed them and who attempted to bid against them. As a result, many fishers became unemployed and gave up their traditional occupation or become fish workers for the lessees. This proletarianisation of some fishers has resulted in growing social and economic differentiation within fishing communities which has given rise to conflict between small elite of well-connected fishers and the mass of fish workers. Such a development weakens further fishers' capacity to mobilise against 'outsider' intrusions into what they regard as their fishing grounds as political and economic pressure on local fisher leaders leads to their cooption into elite networks.

There are also newspaper reports from Kishoreganj District in which the study village of Krishnapur is located. In 2001, Prothom Alo (10 February 2001), a popular national daily, printed a story about a mass demonstration against the exploitation by a lessee of water bodies and illegal toll collection by police from the fishers in Kishoregonj, close to the present study site. It stated that about 3000 men and women of the fisher community of Bajitpur sub-district obstructed the boat of the then Local government and Rural Development Minister (LGRD), who was an elected parliament member from that constituency, to press their demand to stop the exploitation by and the terrorism of the lessees against the real fishers as well as to punish the corrupted government officials, including the police. A number of violent clashes have occurred in Bajitpur fisheries (the study area) of Kishoregonj district and caused several deaths and many injuries to fishers (see appendix 3.3, 3.4 & 3.5)). In 1991, Golap Mia (pseudonym), owner of one fish processing Plant in Kuliarchar, obtained the lease of Bengla Lake in the name of 'Noahata Matsayajeebee Samity'.

During this period, Golap Mia ordered the fishers of Krisnapur not to fish in Bengla Charabadha Fishery and asked them to sell the fish they caught in his Bhairab fish receiving centres. The enraged fishers organised a procession with the slogan: “Only we, the Krishnapur fishers must be allowed to do fishing. The waterbodies should be the properties of us who possess nets (*jal jar jola tar*)”. In December 1992, when the leaseholder placed an embargo on fishing in the open section of the river and raised the tax on fishing, local fishers organised a movement led by a college teacher, Kanthiram Das, a leftist political leader named Hasnat Kaium, and their followers under the banner of the Bangladesh Jele Federation, a wing of a small left political party. On 28th December 1992, fishers of the cluster villages staged a demonstration in front of the TNO (Thana/ Sub-district Nirbahi (Administrative) Officer) office to stop fishing in Bengla Lake by leaseholders and to allow them to fish in the lake and sell their catch in the local market. On 29th December, when fishers found that the leaseholder’s people had not stopped fishing in the lake, they gathered in the Bengla area and tried to physically prevent them from taking some 12 to 15 lakh taka of fish to Golap Mia’s Kuliarchar cold storage. Meanwhile Golap Mia’s men confronted the fishers’ ‘hajarkee’ (an informal local body of thousand fishing people from cluster villages) gathering with the police. Consequently a serious clash and shooting started between the two groups and Golap Mia’s son, Sohel, fired several rounds resulting in the death of a fisher of Kachuakhala named Sanjib Das (18) and wounding Nagendra Das.

Following the incident, the fishers of the locality organized a more vigorous movement and surrounded the Kishoregonj District Administration office chanting slogans against their oppression and exploitation. On October 1994 the fishers finally obtained the lease of Bengla Charabadha fishery in the name Kaimerbali-Boali-Shibpur Matsyajeebi Samity. That year, about 15 fisher associations collectively obtained lease of the lake and a section of the river.

3.6.Conclusion

The history of property rights and management practices in the inland open water fisheries in Bangladesh shows that since British times there has been an erosion of

the common property rights of fishers through the state-directed privatisation of particular water bodies and the transfer of such private property rights to mainly non-fisher leaseholders drawn from the wealthier and politically well-connected members of local, regional and national elites. As a result, many fisher communities find themselves increasingly marginalised and unsure if they and their children will be able to continue as fishers. With this general background in mind, the remaining chapters focus on the situation of the Koibortta fishers of Krishnapur village as they attempt to retain some control over their fishing activities in changing political, economic and environmental circumstances.

The next chapter introduces the Koibortta of Bangladesh, paying particular attention to the Koibortta fishers of Krishnapur and the wider region. It describes the ecology and history of the region in which Krishnapur is located, looking at the importance of wetlands to the ecology and fishing activities of the region and the threats to these wetlands and the fishing communities which depend upon them. Finally, it looks specifically at the history and settlement of Koibortta fishers in Krishnapur and its environs.

Endnote

¹ Customary arrangements are dominant in most African countries and in indigenous areas of many Latin American and some Asian countries. Systems meant to closely resemble customary tenure were re-established in Mexico in the form of ejidos after 1917 revolution and in China and Ethiopia in the context of collectivisation. The defining characteristic of customary tenure/ rights is that property is owned by the community rather than the individual (World Bank, 2003, pp. 52-53).

² Other important news of violent conflicts against fishers included: Political Clash and Terrorism behind Killing of Two Crore (20 millions) Fish Fingerlings (fish fry) in Jhenaidha (The Dainik Janakantha, 17 August 2001); Four People killed in a Clash for Capturing Ghats (fishing ground in river) (The Daily Ittefaq, 23 January 2001); Boundless Sufferings of Fishers in Dikshi Lake, Due to Exploitation and Terrorist Attacks by the Non-fishers Influential, published in the Ittefaq on 27 November 2001; Frequent Terrorist Attacks on Fishers in Sylhet, published in the Janakantha on 23 November 2001; Leaseholders Control most of the Jolmohol (government water body) in Sunamganj district (Ittefaq on 26 September 2000); Fish, Nets and Fishing Boats Looted: Terrorist Attack in Raypur (Dainik Sangbad on 13 July 2000); Fifteen Injured in a Clash over Fishing in Sunamganj (The Independent on 7 April 1999); Hundred Thousand of Fishers are in Grip of Fear from the Leasees in Kishoregonj (Bhorer Kagaj on 28 December 1992); Fake Fishers Association of the Non-fishers Leasees captured 150 Jolmohols in Upper Riparian (Northeastern part of the country), published in the Dainik Bangla on 29 August 1992; The Cooperative Fisheries in Atrai Looted, published in the Inkilab on 4 April 1993.

CHAPTER FOUR

Introduction to the study area and the Koibortta of the region



Figure 4.1: Krishnapur: a floodplain village in monsoon period.

4.1.Overview

The fishers of Krishnapur inhabit a region rich in ecology and history. This chapter provides a background to that ecology and history. It first introduces the village Krishnapur, discusses the importance of wetlands to the ecology of the region and finally it gives a brief history of the development of Koibortta communities who have adapted their way of life to the specific ecological and other conditions found there in this Northeast floodplain region covering the whole area of Kishoregang district (see figure: 4.1).

4.2.The village Krishnapur and its setting

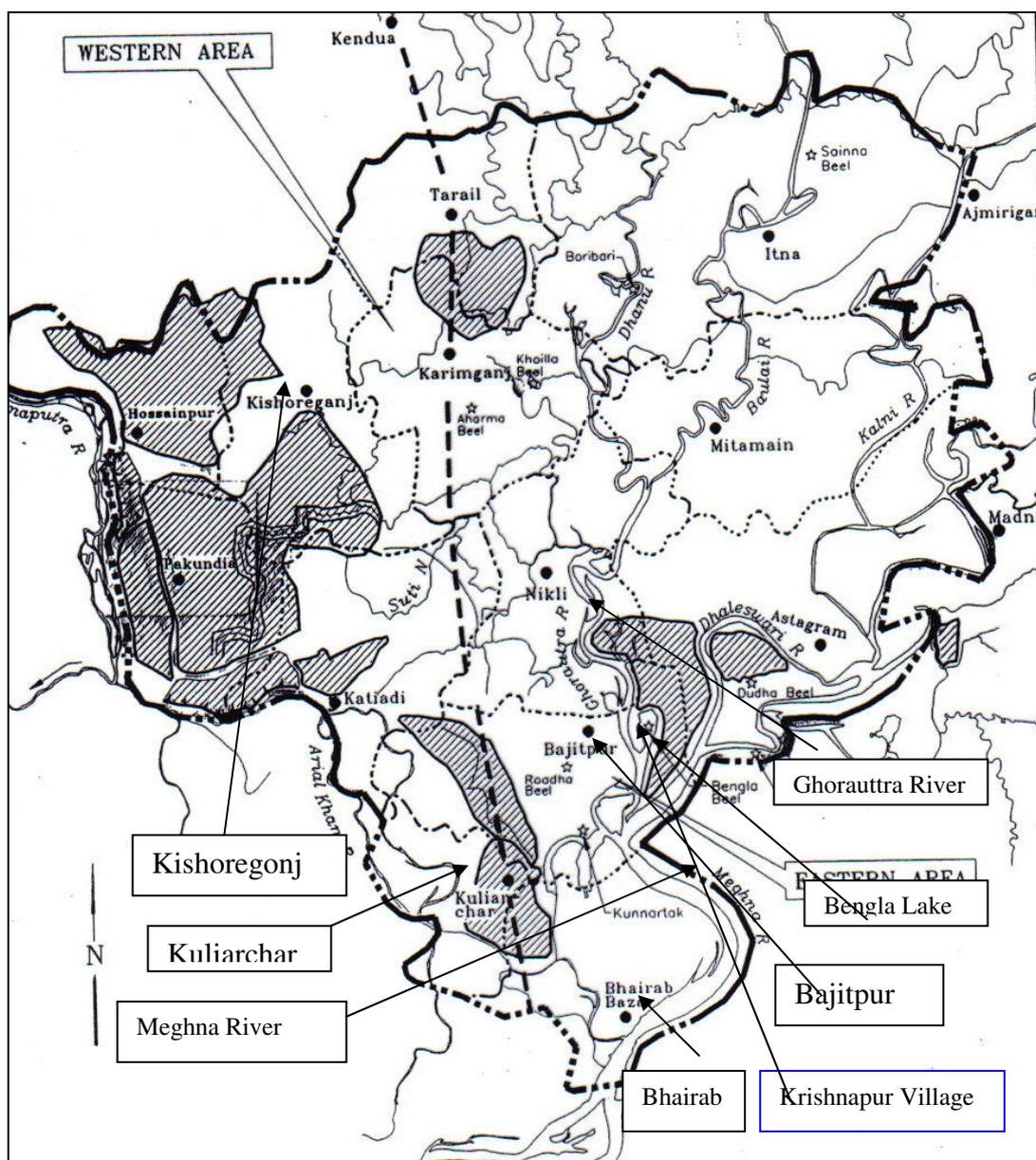
The village of Krishnapur is geographically situated between $24^{\circ}13'$ and $24^{\circ}15'N$ and between $90^{\circ}79'$ and $90^{\circ}81'$ E. in Bajitpur sub-district of Kishoregonj District in the Northeast wetland¹ region of Bangladesh. The region is locally called 'haor' or 'bhatee anchal'. The Kishoregonj district borders the districts of Netrokona and

Mymensingh in the north, Norshingdi in the southwest, Brahmanbaria in the southeast, Sunamgonj and Habiganj in the east and Mymensingh and Gazipur districts in the west. The district is situated between $24^{\circ}34'$ and $25^{\circ}12'$ North latitudes and $90^{\circ}00'$ and $91^{\circ}07'$ East longitudes and it occupies an area of 2,688.62 sq. km with a population of 25,25,221. The main rivers of the districts are Old Brahmaputra, Meghna, Kalni, Dhanu, Ghorautra, Baurii, Narasunda and Piyain. Bajitpur is one of district's 13-Upazila/ Thana/sub-district with a population of 197081 and is situated between $24^{\circ}09'$ and $24^{\circ}18'$ N and between $90^{\circ}50'$ and $91^{\circ}03'$ E. Main rivers of this sub-district are: Meghna, Baulai, Ghorautra, and Old Brahmaputra (almost dead). Bajitpur sub district occupies 193.76 sq. km, of which rivers cover 10.83 sq. km. It borders Katiadi, Nikli and Austagram in the north, Kuliarchar, Bhairab and Sorail sub-districts in the south, Austagram and Narsingdi and Nasirnagar sub-district of Brahmanbaria district in the east and Katiadi in the west (Figure 4.2-4.5). The sub-district consists of 12 unions, 92 mauzas and 178 villages.

The large number of rivers and land depressions make the eastern part of Kishoregonj a specific kind of landscape with its evergreen shrubs, berries and bamboos. Rivers in the west and south and land depression in the East and North surround the village and tidal waves (especially during the rainy season) are a constant threat to dwellings.

4.3. Wetland ecology and the inland fisheries of Kishoregonj

Kishaoregonj district is especially famous for its large area of inland open water capture fisheries which include a number of rivers and estuaries, land depressions and lakes varying in size from a few hectares to more than two thousand hectares and a large area of floodplains (appendix 4.1). The area is flooded yearly by the monsoon rains and many parts retain some water throughout the dry season. This floodplain region is also a wetland eco-system of major national and international importance and plays an important hydrological, biological and ecological role in the natural functioning of the region (Hossain, 2002). However, over the last couple of decades, the bio-diversity and resources of land depressions and oxbow lakes have come under great threat in the absence of effective government control.



Source: FAP-6

Figure 4.2: Northeast Region of Bangladesh



Source: <http://banglapedia.search.com.bd>

Figure 4.3: Bajitpur Sub-district

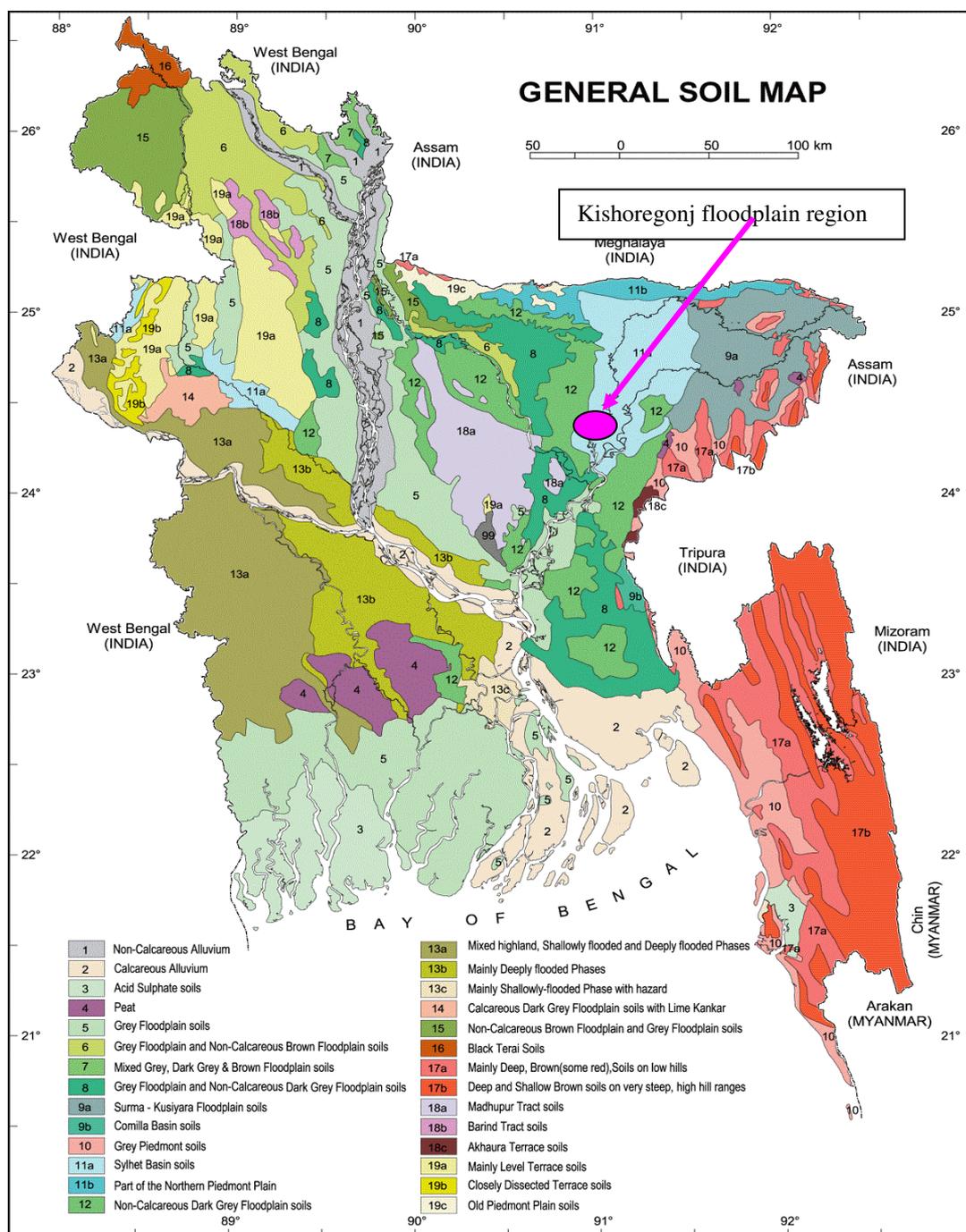


Figure 4.4: Soils of Bangladesh

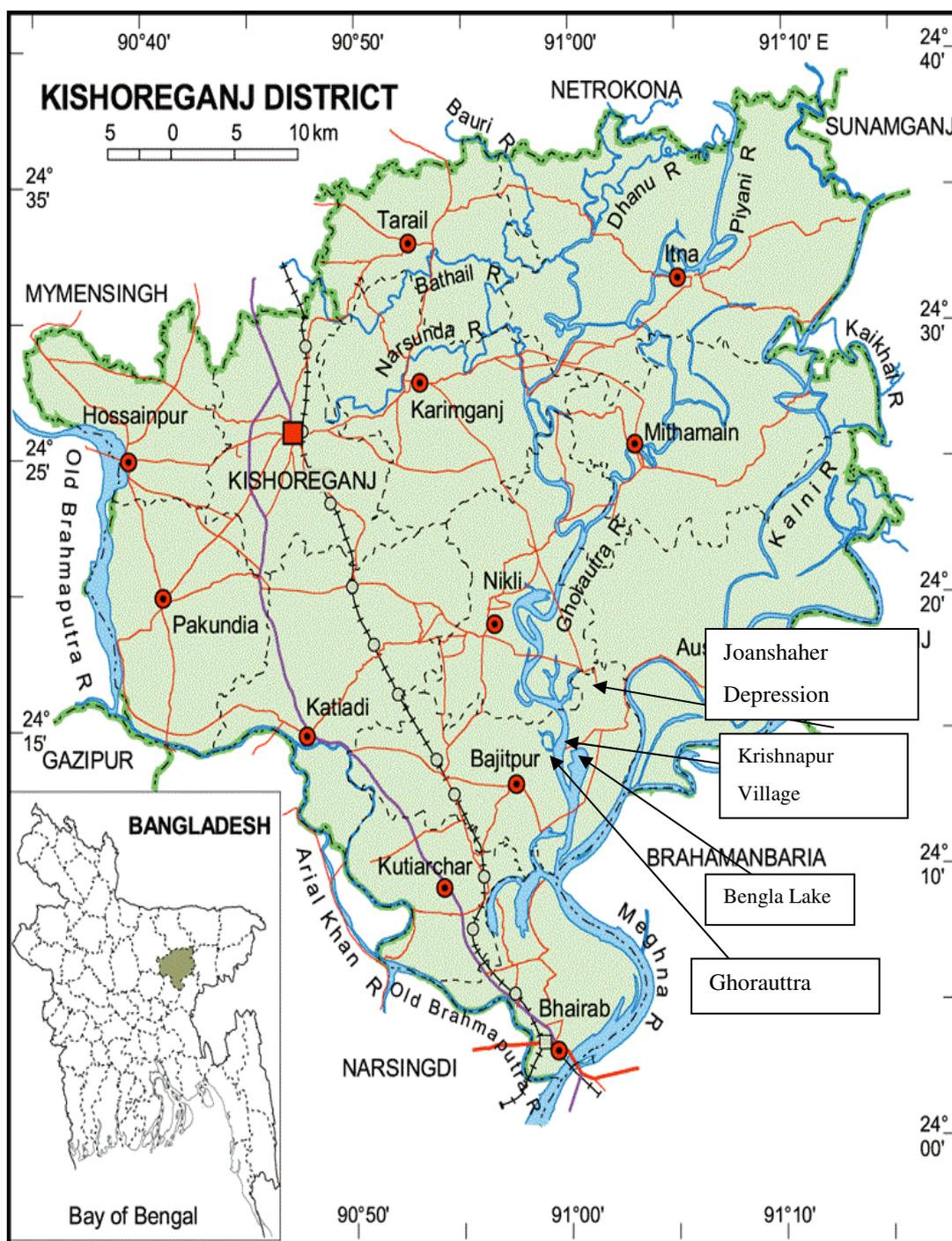


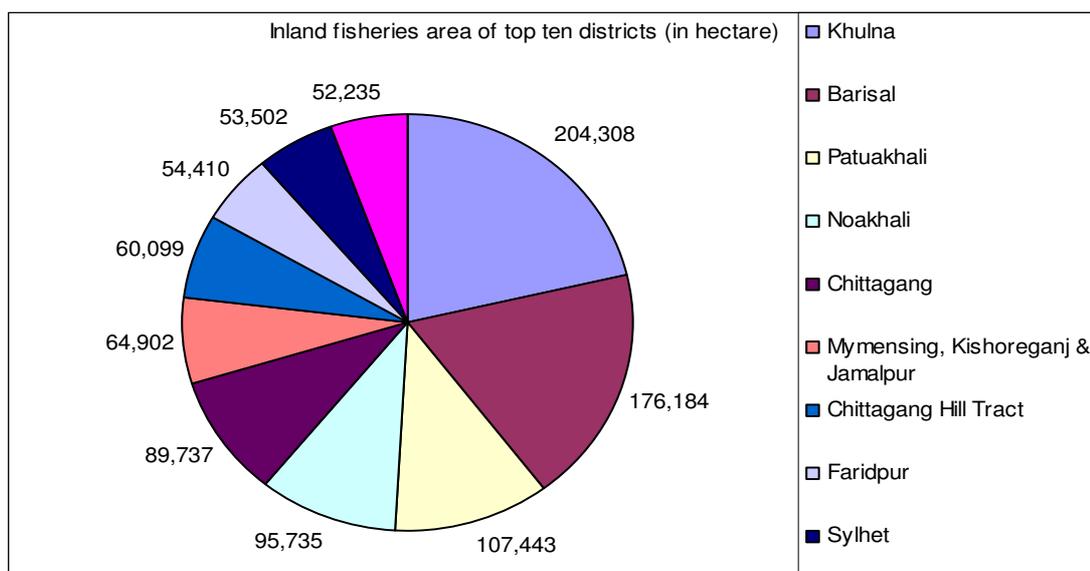
Figure 4.5: Kishoreganj District

According to the DOF (2001), greater Mymensingh (which includes Kishoregonj District) has 35,496 hectares of rivers and estuaries and 29,406 hectares of land depressions and lakes. Bangladesh has a total of 114,161 hectares of land depressions and lake fishing areas of which Mymensingh contains the largest area of land depressions and lakes after greater Sylhet district (32,700 hectare) (see figure 4.6-4.10). In 1999-2000, the floodplains provided about 62 percent of Bangladesh's total inland fisheries catch, of which Mymensingh's contribution was the highest in terms of district wise production (Ali et. al., 2003) (Table: 4.1).

Table 4.1: Annual inland waters catch by district in 1999-2000 (in metric tons)

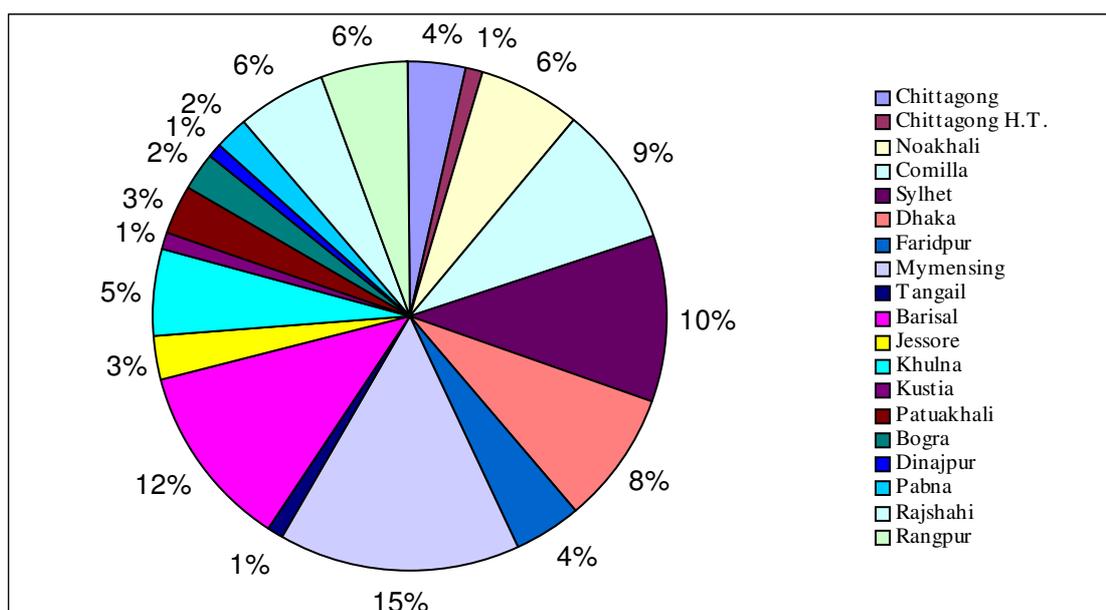
Former District (Old)	River, Canal & Estuary	Sundarban	Lakes	Kaptai Lake	Floodplains	Baor	Total
Chittagong	6564		204		17,890		24658
Chittagong H.T.	39			6,852	754		7645
Noakhali	19810		1		23,251		43062
Comilla	21200		819		37,205		59224
Sylhet	4135		27,217		39,019		70371
Dhaka	4002		2,590		49,762		56354
Faridpur	3975		1,663		22,500	542	28680
Mymensing	8309		18,878		73,479		100666
Tangail	955		2,387		5,034		8376
Barisal	53468		17		24,669		78154
Jessore	2662		2,225		11,902	1,988	18777
Khulna	6767	11,648	113		17,295	195	36018
Kustia	553		969		5,986	897	8405
Patuakhali	11565				9,087		20653
Bogra	241		1761		14,132		16134
Dinajpur	104		318		5,406		5828
Pabna	4248		1,729		8,512		14489
Rajshahi	3524		8,846		25,430		37800
Rangpur	1214		3,088		33,488		37790
Total	150,830		11,648	6,852	424,488		671900

Source: Ali et al., 2003.



Source: Ali et al., 2003.

Figure 4.6: Top ten inland fisheries districts (in hectares)



Source: Ali et al., 2003.

Figure 4.7: Inland waters fish catch (%) of major districts in 1999-2000

Besides making a significant contribution to the country's total inland fish production, the land depressions and lakes of the study area also support a rich and diverse aquatic plant life with extensive floating and emergent vegetation and shelter for a wide variety of resident bird species. This natural wetland is of major

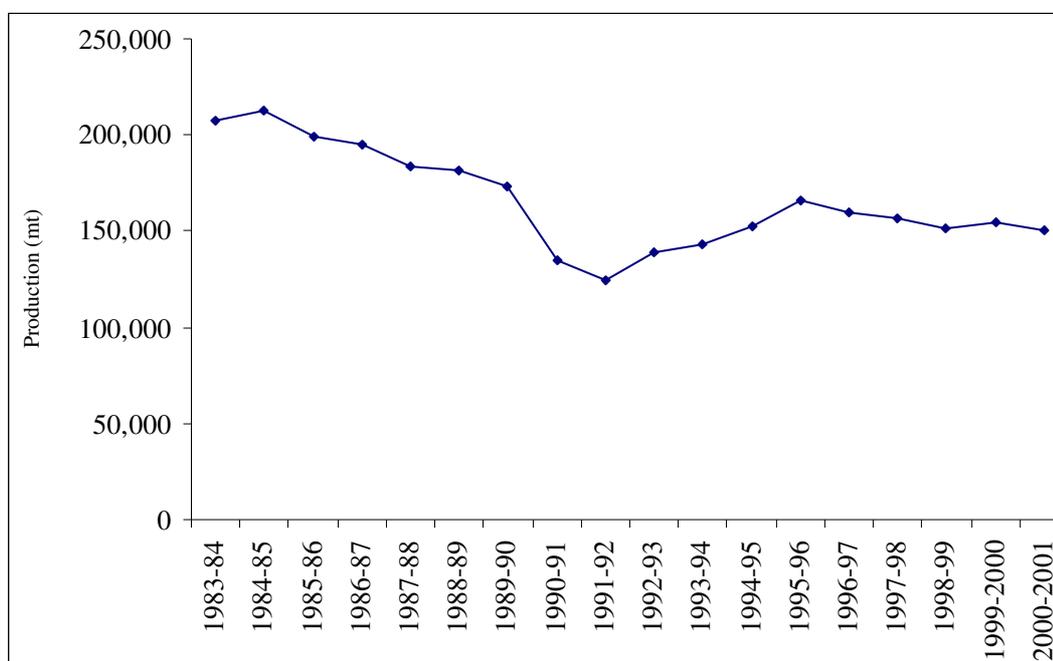
importance to its marsh vegetation and to its large and diverse waterfowl populations. The area is particularly attractive to shore birds and several species of herons and egrets. It also supports cormorants, purple heron, black-headed ibis, spot-billed duck and purple swamp hen. During the winter migratory birds from the Himalayan region, Siberia and China use the land depressions and lakes as their feeding and resting places while travelling further south (Environment and Assessment of Flood Impacts, South Asia-Bangladesh, 2003).

The region is rich in fish upon which many riparian communities depend. The majority of the poor of the wetland area are dependent on the water resources for their livelihood in different ways (see figures 4.8 on poultry rearing & 4.9 on dairy rearing). For example, in the monsoon months, navigation is an important source of employment and both professional boatmen ('majhi') and many non-traditional boatmen ply boats. The rootstocks of 'taro kachu' ('ghechu': *Aponogeton spp*), lotus (padda), and water lilies (shapla) are rich in starch and a number of species of *Polygonum* locally known as 'bishkatali', are effective anti bacterial agents. The flowers and seeds of the lotus are prescribed for piles, as a cardiac tonic and for the elimination of ringworm. The flowers of water lilies are said to be a remedy for heart ailments. The land depressions also yield a number of important biomass products such as fuel-wood, timber and bark for fodder and organic manure. In this floodplain region 'patipata' plants are used for making mats and screens, stems and branches of 'jiyal' and 'koroch' are exploited locally for construction of fences, for firewood and for making artificial harbours ('Jag kata'/ 'Katha') for growing fish. Heavily grazed grassland and rice fields surround the haor of the study area and despite high levels of disturbance from bird hunters and fishers, the land depression remains very important for ducks and migratory shore birds.

4.4. Pressures on fish resources in the region

In recent decades there have been growing pressures on fish (and other) resources. Among the most important are siltation, water pollution and the reduction of water flow in the major river systems primarily because of the Indian Farakka Barrage, over-fishing, and fish habitat loss or degradation. As a result, there is evidence to

suggest that inland fish catches have declined significantly and fish biodiversity has been affected with changes in fish species composition. For example, Ali et al. (2003) report a substantial decline in the country's total river catch by species from 1983 to 2000 (Figure 4.8). Mazid and Gupta (1995) report that over the last few decades, fish habitats and yields have drastically declined in floodplain fisheries primarily due to the conversion of water areas to cropland and the increasing use of pesticides and chemical fertilizers in agriculture to raise crop yields. Elderly fishers of the study area also commented that river catches have declined and reported that a number of endemic species of fish found in the local rivers, land depressions and lakes are today threatened by a variety of human interventions. The nutrient rich bottom mud of the local fisheries is increasingly being mixed with the sediment-laden run-off-water from neighbouring marshes or rivers which is possibly leading to massive fish kills. The area has been particularly affected by the introduction of phytoplankton communities dominated by blue-green algae resulting in an increase of algal blooms.



Source: Ali et al., 2003

Figure 4.8: River catch by years from 1983-2000

Over the last several decades the region's population has risen rapidly which has put great pressure on its capacity to grow crops and fish. The increasing demand for fish, combined with a reduction in supply, has made local water bodies more valuable, which has increased non-fisher control of water leases, and reduced the availability of common pool resources. Fishing effort has intensified, prompting William J Collis, natural resources advisor of a USAID-funded fish project, to say that there are too many people chasing too few fish (The Daily Star, 7 April 2004).

Other pressures on the region's resources include pesticides which contaminate ground and surface water, fish diseases such as white spot, effluent and industrial waste, domestic garbage and municipal waste, which cause sewage contamination, and river siltation. Water quality has declined due to indiscriminate disposal of industrial pollutants, agro-chemical residues and organic wastes into the open water system, making the open aquatic environment very hazardous for fish (Faisal & Parveen, 2002; Mazid & Gupta, 1995).



Figure 4.9: Rearing ducks: fishers' non-fishing assets



Figure 4.10: Cattle grazing: fishers' non-fishing assets

Commenting on the impact of the Farraka Barrage, local fishers say that mother fish (fish carrying eggs) stocks residing in smaller rivers, estuaries and canals are particularly affected by reductions in water levels, which interferes with migration of brood fish and fish fry. Farooque (1997) reports that river siltation is a major problem with some six millions cubic metres of water carrying an estimated 2,179 million tons of sediment to the sea each year by the Ganges-Brahmaputra river system. Other major sources of siltation are the increased run off during the rainy season, floods and increased erosion of topsoil as a result of vegetation depletion, construction of flood control water management systems and road embankments.

The adverse effects of these developments can be seen in the dwindling population of natural fauna. In the floodplain region, the common otter (*Lutra Lutra*), smooth coated otter (*Lutra pers picillata*), fishing cat (*Felis viverrina*), black pond turtle (*Geoclemys hamiltoni*), black monitor lizard (*Varanus benhalensis*), rock python (*Pytholon molurus*) and monocellate cobra (*Naja naja kauthia*) are all under threat. Flora such as the Makhna (*Euryale ferx*) is overexploited for its edible seeds and the wild rose of Bengal (*Rosa innvolverate*) is being depleted rapidly because of loss of habitat (Islam & Rahman, 2001). Exploitation of water resources has increased

tremendously in the absence of alternative forms of economic activity. The birds and other fauna in the region are subject to an extensive illegal trade, and fish production and species diversity have seriously declined (Tsai & Ali, 1985). According to the Nature Conservation Committee of Bangladesh ‘the unplanned crop cultivation, excessive drainage, and illegal occupation of fisheries resources in the name of leasing and excessive extraction of aquatic resources year after year have virtually denuded the uniqueness of these wetlands’ (The Daily Star, 13 Oct 2004). The ‘Haor Bachao Andolon’ (a local NGO collective movement organised by the CNRS for saving *haors*) along with local fishers has demanded cancellation of the lease of haors, adequate afforestation and involvement of locals in protecting the wetlands.

Under the existing three year open auction-leasing system which operates in Kishoregonj, Koibortta and other fishers have little scope to raise fish production except by restricting the use of some of their destructive gear which catch under sized fish. Whether or not they catch fish, fishers are required to pay tolls or rent to leaseholders for the whole season. Many leaseholders see no reason to conserve fish resources as this would require longer-term investment which they are unwilling to make as they hold only short-term leases. The Ministry of Land, which owns the fisheries and collects revenues from leasing, plays no role in increasing the productivity of the fisheries resources, focusing rather on raising as much revenue as possible through yearly rental increases. Leaseholders are subject to high legal and illegal leasing costs and also to increased lease prices yearly. To ensure a return on their investment they exploit the resource to often unsustainable levels by taking as many fish as possible regardless of size and rarity and by allowing other fishers to do the same. Absence of strong administration from law enforcement agencies, the Fisheries Department and others government bodies is encouraging such exploitation. Many local fishers accuse the Fisheries Department of not taking due care to protect endangered or threatened fish species. Stock assessment statistics are considered unreliable as the Fisheries Department is thought to fabricate statistics for total fish stocks. Local fishers report the Fisheries Department is supposed to release fish fries and fingerlings in open water bodies to boost production but hardly ever does so. Thana Fisheries Officer (TFO) blames the Ministry of Land (MOL) for failing to

provide enough rental income for development purposes. This division of responsibility between Fisheries and Land is an important contributory factor to the poor management of fish resources.

An analysis of various official reports and extensive discussions with different stakeholders of the study area including the leaseholders, fish traders, boatmen, sand collectors, bird hunters, snail collectors, ferrymen, public transport owners and others identified the following as the major causes of fish loss. Blockages in canals linking lakes to land depressions resulting in sedimentation of lakes, have forced many fish species to leave. World Bank FAP 2 studies in the region show that infant fish are highly reliant on the wide range of energy sources available on the formerly cultivated agricultural land of the floodplain at the end of the dry season, and are extremely susceptible to even small changes in the timing of over bank flows which provide them with access to the floodplain at a critical stage in the development of their food preference patterns (Cross, 2002). Destruction and shortage of natural fish feed such as roots, herbs and other micro organisms are also resulting in decreased production. Snails were once plentiful in local lakes (especially in Bengla) and rivers but have declined because of their use as feed in shrimp culture and poultry farming. Fisheries leaseholders now sell snails to hundreds of snail boat people (who collect snails from the lakes by boat) and to traders from different parts of the country.

The loss of bird species has an indirect effect on fish resources as they provide natural fertilizer eaten by the fish. However, in recent year's leaseholders on Bengla Lake and other water bodies, who own rights over these birds (as they live on the water of their lakes), sub-lease out the lakes to bird hunting groups, who during Poush-Magh (December-January) catch thousands for sale to different parts of the country. Bird hunters are called 'jele' as they use nets similar to those used by fishers. Fishers of Krishnapur also mentioned that fish stocks are affected by the numerous mechanized boats, river craft, fishing trawlers, passenger boats, and steamers which ply local water ways and discharge waste oil and other contaminants. Local fishers report that twenty years ago there was a relative abundance of big size 'Pangas' and Ruhi as well as an important species called Nandin in Bengla Lake. These are now much less common and Nandin is thought to be extinct. Fishers continue to catch big

size fish such as Aire (10/12 kg), Ruhi (20/25 kg), Katal (15/20kg), Boal (15/20kg) and Kali Baos (4/5kg), but in smaller quantities. Bengla Lake is also well known for Chapila, Air, Kali Baos, Ghainna and Shwarpunti, which fetch high prices for the leaseholders.

4.5. History of Koibortta in Bangladesh

The wetlands region described above has been the home of Koibortta and other fishing peoples for centuries. These peoples have developed distinctive and sustainable ways of life based upon an extensive knowledge and understanding of local fisheries. Early literary texts provide us with a clear view of a range of fishing activities in the region and other parts of Bangladesh and India by the late second or early first millennium. For example, fishhooks are found among the earliest prehistoric artefacts (Reeves, 2003; Sarkar, 1954) and in the artefacts of 'Harappan' civilization of the Indus Valley (Piggott, 1950; Sarkar, 1954; Bagchi, 1955). The Rg Veda refers to the methods of catching fish by net and to those who catch them (Das, 1931, p. 294). The Vajasaneyi Samhita and the Taittiriya Brahmana list those who lived by fishing, including '...the Kaivarta or Kevarta, Puanjistha, Dasa, Mainala... and perhaps the Baina and the Anda' (Das, 1931, p. 295).

By the time of British rule in the late 18th century, most rural people in East and West Bengal engaged in fishing and most were low caste Hindus. In these early days, fishers were often boatmen and engaged in such fish-related work as fish trading, net and boat making and the curing and preservation of fish. They also had elaborate fishing rites and rituals such as the worship of 'Ganga Devi' to ensure a good catch. Many of these rituals persist to the present day (Pokrant, 1996).

Several 19th century British colonial observers such as Gupta (1908), De (1910), Jack, O'Malley (1912), Day (1871, 1977), Hunter, Buchanan-Hamilton (1987), Wise and Risley (1981, vols. 1&2) noted that almost all Bengalis ate fish and described the activities and fishing technologies of more than thirty fishing castes and groups. Fishers used over 100 different types of nets and some ten types of boats, which were used for both general and specialized fishing. There were many techniques of fishing depending upon the fish caught, type of water body and season of the year. Fishing

parties were organized in different ways and the catch was often distributed according to a share system based on net and boat ownership and labour input (Saha, 1970).

Most Bengali professional fishers were low caste or outcaste Hindus who inherited their occupation. The main Hindu fishing castes or jatis were the Koibortta, Kewat, Karita, Malo/Jhalo, Bagdi, Tiwar/Tiyar (Rajbangsi), some Namasudra (Jiani/Charal/Chandal), Das Shikari (Rajbangshi), Berua, Jiani, Karal, Pod, Bind or Bindu, Bagdi, Patni, Nadial, Mali, Hari, Gonrhi, Banpar, Gangota, Murari, Surahiya and Lohait (Hunter, 1877; Gupta, 1908; De, 1910; O'Malley, 1912; Mitra, 1946; Pramanik, 1993; Risley, 1981).

In different areas of historic and contemporary Bangladesh, Hindu fishers are normally referred to as Namasudra, Rajbangshi, Jalo, Malo, Koibortta, Barman, Halder, Das, Sarker, and Biswas. Namasudra dominated in Faridpur, Khulna, Jessore, Sylhet, Gopalganj and Chandpur, Sarkar in Barisal, Biswas in Jessore and Khulna, Rajbangshi in Rangpur, Dinajpur and Munshigonj, Koibortta Das in Rangpur, Rajshahi, Kishorgonj, Mymensingh and Sylhet, Malo in Faridpur and Halder in Pabna/Sirajgonj/Rangpur/Bogra.

Pokrant et al. (1997) identified Malo, Koibortto or Jolodas, Namasudra/ Nomosudra and Maimol/ Mahemal as the major traditional fishing groups in historic Bangladesh. According to Sanyal (1981, pp. 104-13), among all these fishing communities, Koibortta are in a majority and claim higher status² than many fishing castes. As mentioned earlier, Bengal fishing communities belonged mainly to the Sudra Varna (Mukherjee, 1963; Dumont, 1987). The Rigveda mentions 18 lower caste occupational groups among the Hindus in the 11th century and das (Jolodas) was one of them (Alam, 2001, p. 31). The Das were divided into Halik or Halodas (farmer) and Jalik or Jolodas (fisher). The Koibortta, while generally considered of Sudra status, sometimes claimed Vaisya (merchant/farming) status and were generally referred to as chasi or cultivator rather than jele or fisher over whom they claimed higher ritual and political status (Bandhyapadaya, 1997; Hutton, 1963; Sanyal, 1981; Russel and Lal, 1975). According to Hutton (1963, p. 53), the Bengali Koiborttas

were long regarded as a single caste divided occupationally into Jaliya Koibortta who worked as fishermen and Haliya (Chasi) Koibortta who lived by agriculture. Haliya Koibortta demanded large dowries for their daughters when married to Jaliya Koibortta, while refused to marry Jaliya women. The Jaliya Koiborttas were divided into two sub-castes or jatis called Jalo and Malo. The Rajbanshi and Das were two other caste communities who are said to have taken up fishing and became jele. Marriage of Jalo and Malo to Rajbanshi and Das was not allowed and this attitude prevails to the present day. Risley (1981) found in Bakerganj that intermarriage was permitted between them but was restricted by certain conditions. Girls of the Haliya Das class could marry Koiborttas, but if a Haliya Das male married a Koibortta girl, his family was considered guilty of a mis-alliance, and lost status. Such marriages frequently took place, but the Koibortta family had to pay a high price to the groom's family.

Over time the Haliya Koiborttas managed to ban intermarriage with Jaliya Koibortta and gained recognition as a separate caste named Mahishy (Gait, 1901). O' Malley (1912) reported that in Jessore District the Koibortta were divided into three groups: chasi, Jaliya and other. De (1910) divided Koibortta into three groups: 'Adi' meaning first, 'Madhya' meaning middle (both these groups having given up fishing to cultivate) and 'Antya' or last who were the fishers. De (1910) also referred to Antya Koibortta as Jalia Koibortta (jal means net in Bengali). On the other hand Hunter (1877, vol.1) identified 5 categories of Koibortta: 1) Uttararhi or Chasa Koibortta; 2) Purba-desi Koibortta who were cultivators, possibly Sudra, 3) Tunte or Dakshin-rari Koibortta who farmed and reared animals, 4) Shiuli who were date tappers (date juice collectors), and 5) Male or Jele (fishers) who were fishers and boatmen (Pokrant, 1996). Risley (1981) observed that the internal divisions of the caste differed in different districts. For examples, in Central Bengal there were cultivating and fishing groups with various names such as 'Halik' and 'Jalik' or 'Chasa' and 'Jalwah or Jaliya' while in Dhaka there was no 'Chasa or Halwaha' division, and the 'Das Koiborttas' had not then become a distinct caste. In Dhaka, the 'Jalwaha' or fisher Koiborttas were all members of one 'gotra' (class), the Aliman, and had the common

title of Das, but some practised medicine and were known as ‘Baidya’ (Risley, 1981, p. 378).

In addition to Hindu fishers, a minority of Muslims were also specialized fishers belonging to low status (atraf) communities, although some claimed a higher status (ashraf) origin. It is likely that many of these Muslim fishers learned their trade from Hindus. The main Muslim fishers in historic Bangladesh were Mahimal/Maimal, Nikari, Gutia, Jelia, Jiani, Dhawa, Abdal, Kalwar, Bebajia/Bediya/Mal Baidya, Dalatitya, Chaklai, and Dohuiriya. Today, the Muslim fishers can be classified into two groups: the Mahimal/ Mahefarosh and the rest. Mahemal (from the Persian Mahe meaning ‘fish’ and farosh meaning vendor and mohol meaning ‘place’ or ‘body’) are concentrated in the Northeast region of Bangladesh, including Kishoregonj, Sunamgonj and Sylhet, and are probably the oldest Muslim fishing group in Bengal. Another fishing community, the Magh, were Buddhist and lived in Southeast Bangladesh (see Pokrant, 1997).

As the largest fishing caste, the Koibortta, consider fishing to be their original occupation and claim that their ancestors saved the deity in their boat on the occasion of the deluge. In return, they were given the power of catching three or four times as many fish as others (see Dumont, 1987; Kotani, 1997; Russell and Lal, 1975; Sanyal, 1981). Risley (1981) identifies Koibortta as one of the earliest inhabitants of Bengal (1981, p. 376). According to one tradition, a few hundred years ago there was a Dhiba king on the bank of the Shindhu River and the Koibortta originally came from this Dhiba. The Koibortta are said to have once ruled in the North Bengal (Barind/ Varendra) region during the Pal dynasty (from 8th to 12th AD) and the whole Barind was under three Koibortta kings named Dibba/Divya, Rodhok/Rudoka and Vim/Bhima (Ray, 1993, p. 228). They ruled Varendra before Rampala (c 1082-1124 AD) re-established the Pala dynasty in the area.

Historical references point to a great rebellion in the Varendra area (the northern part of present Bangladesh including Rajshahi Division) during the reign of the Pala emperor Mahipala II (c 1075-1080 AD), which resulted in his death and the loss of Veranda to the Kaivarta chief Divya. The loss of Varendra and its recovery by

Rampala is the central theme of Sandhyakaranandi's famous Kavya Ramcharitam, the only source of information about the incident, which attributes the rebellion to Divya and the Kaivartas against the oppressive rule of Mahipala II. It is also mentioned that the Kaivarttas resented the Buddhist rulers who were against their fishing profession (Banglapedia, 2004).

Another Koibortta history remembered by many fishers today is the story of Rani Rashmoni of Natore, a zamindar's wife of Sudra origin, who was very popular among the Koibortta fishing people for her role in assisting fishers in the 19th century to retain fishing rights on open waterways on the Hugli River. Rani Rashmoni, (1793-1861) a philanthropist and religious activist, was born to a peasant family and was married to the wealthy Rajchandra Marh. Widowed at the age of forty-three, Rashmoni continued to use the family wealth for various social projects and charities. She supported the poor fishermen's struggle to win the right to fish in the Ganges/Hugli and eventually forced the British to abolish the tax imposed on river fishing. She is said to have laid iron chains across the river to help the fishermen of the Hugli whose livelihood was hampered by speeding British steamers (Banglapedia, 2004).

4.5.1. History of Koibortta in Kishoregonj

The Koibortta of Kishoregonj lives on the delta of the three great river systems of the Ganges/ Padma, Jamuna/ Brahmaputra and the Meghna. In ancient times, Kishoregonj was included in the Kingdom of Kamrupa. In the 6th and 7th centuries AD Buddhist travellers came here from China and it became a predominantly Buddhist area. In the 11th and 12th century, the Pala, Varman and Sena kings ruled the area. Later there arose several petty independent Kingdoms under the Koch, Hajong, Garo and Rajbangshi and in the 12th century the area came under the Hindu King Bijaya Sen who defeated the Buddhist Pala King of Gaur. Bijaya Sen and his son Ballal Sen consolidated their position by promoting Brahmin immigration from other regions of India. Muslims came to the area as settlers and preachers rather than as conquerors and Saint Shah Sultan who settled near Netrokona led one of the earliest groups. By 1491 AD the greater part of Mymensingh was under the Muslim rule of

Feroz Shah, but Kishoregonj remained outside its control. It was during Akbar's reign that the greater part of Kishoregonj was included in the Mughal Empire, with some areas, which included Jangalbari and Egarasindhur, under the Koch and Ahom kings. In 1538 the Mughals defeated the Ahom king of Egarasindhur and in 1580 Isha Khan³ defeated the Koch chief of Jangalbari (Banglapedia, 2003). In 1582, Todormal, the Revenue Secretary of Emperor Akbar identified Bajitpur as an important place of fishing. In Rennell's Atlas⁴ (one of the earliest atlases of Bengal and its adjoining areas), Bajitpur was also shown as one of the important trading places for the East India Company.

Bajitpur was established as a sub-district in 1835 and while little is known about the origin of the sub-district name, local tradition has it that during Mughal times there was a Royal employee called Baijid Khan who lived in the area and who gave it his name. At that time, it was an important trading and administrative centre (Bangladesh Population Census 1991) and was part of 'Sayar Jalkar Porgona', which later became part of 'Joenshai Porgona'. There is anecdotal evidence that Joenshai Porgona was named after either the brother of Bengal emperor Sultan Hossain Shah or the employee of Isha Khan's 'Sayar Jalkar Porgona' (there is a land depression in Bajitpur named 'Joenshaer haor'). According to Todor Mol (revenue Secretary of Emperor Akbar) revenue records, most of Bajitpur was under the administration of Bajuhar Sarkar of Sayar Jalkar Porgona where maximum revenues were collected from 'Sayar, Sayrat Mohol or Jol mohol'. At that time, Nouka or Kushsha (boat) was collected as revenue (Kar), which was also known as 'Jal kar' or 'Nouara joma'. According to Mughal revenue records, revenue from land was known as 'mal', while revenue from trading and water bodies was known as 'sayar' (from which the word 'sayrat mohol or jol mohol' was derived).

During the British period, the naval port of Dulalpur in Bajitpur sub-district became important and a number of indigo centres were established at Gopinathpur and Ghoraghat. Consignments of pearl of the 'bhati region' (low-lying floodplain region) were sent from these areas. Once Bajitpur was famous for its fine quality 'Muslin', called 'tanjab', and in Rennel's map of 1781, it was shown as an important place. At that time Mymensingh was known as Bagunbari, while Kishoregonj was known as

Junglebari. In 1787 Bagunbari was renamed Mymensingh and in 1860 Junglebari became Kishoregonj (Baker 1995; Banglapedia, <http://banglapedia.search.com.bd/>).

Today Bajitpur sub-district is noted for its fish, sweetmeat, milk, and boro paddy grown largely in the low-lying haor areas. Other crops of this area include: jute, wheat, potato, peanut, sweet potato and other green vegetables (Banglapedia, 2004).

According to historical sources (Baker, 1995), the Koibortta were among the earliest inhabitants of Bajitpur, who were attracted by the fisheries resources of the area and settled there between the eighth and twelfth centuries. In the early days of settlement, the area contained many swamps/ land depressions, lakes, canals, rivers and their estuaries and the Koibortta fishers cleared forest, built homes and fished both day and night. Koibortta fishers who came from the eastern and south-eastern parts of the region first settled in Hilochia, Digheerpar, Dilalpur and other adjacent villages of Bajitpur. Prior to this, fishing peoples had settled in Austagram Upazila of Kishoregonj and Sorail Upazila of Brahmanbaria and then a section of those fishing communities came to Bajitpur and established new settlements. The fishing groups who settled first in Kishoregonj included Koch, Koibortta, Jalo, Malo, Tyor and others. Many Koibortta Das and Namasudra also settled in various villages in Bajitpur, attracted by the abundant fish in the major lakes of the area such as Tejkhali, Kadangi Nadi, Zukka, Laondi and Argon. At that time, the deep waters of the Brahmaputra, Meghna and Gorauttra rivers and their tributaries made Bajitpur famous for different types of fish such as Mrigal, Tengra, Shing, Magur, kai, Puti, Shwarputi, Titputi, Ghaura, Kazali, Gachi, Raga, Dhela, Mola, Goinna, Baila, Icha, Bacha, Rita, Baim, Chapila, Chanda, Kaikka, Pabda and Batashi. Bajitpur and Kuliarchar were especially famous for one fish species named 'Taka', a very tasty fish, which has since become extinct (Baker, 1995). Baker in his book *Bajitpurer Itihas* (1995) further mentions that in the past, the fishers of Bajitpur used different types of fishing gear and technologies for a wide variety of fish species. These included Khara, Berjal, Kunijal, Chai, Bora, Daun, Barshi, Topa barshi, Polo, Koi jal, Thela jal, Uch, Koach, Aour, and Dutia. Koach and Dutia were used during the monsoon and *Aour* was used in boat fishing at night during the late monsoon.

After the settlement of Koibortta fishing communities in Bajitpur, other occupational castes or sub-caste groups such as the Patuni, Sutradhar, Kamar and Kumar came to settle in the area. Hailla Das, Namasudra, Jalo, Malo and Barman fishing communities also began farming. Following them, Barui, Napit, Matial, Mali, Teli, Tati, Jogi, Chamar, Ghosh and other caste groups (occupational groups) came to farm and began to exchange food crops for fish. For example, weavers (Tati) exchanged cloth for fish with the Napit, Sutradhar and Mali (Baker, 1995, p. 13). According to the 1911 census, there were a number of caste groups in Bajitpur. The major caste groups and their populations were Brahman (1,407), Goala (1,492), Jogi/Jugi (1,961), Koibortta (11,043), Kayastha (2,539), Malo (1,217), Muchi (1,902), Namasudra (7,347), Napit (1,366), Shaha (3,946), and Sutradhar (2,420) (Baker, 1995).

Some of the old fishers of Krishnapur mention that in Bajitpur, fishing communities first settled in Kaimarwali, which is adjacent to the study village Krishnapur, some 300 years ago. Another group of fishing people consisting of Koibortta, Barman or Jalo, Malo and Namasudra settled in Noagoan in the mid eighteenth century. Among all the fishing communities of Bajitpur, Koibortta were the majority and claimed the highest status within the Sudra caste groups. Barmans were generally considered of lower status than the Koibortta, which is still the case today. Considered unclean by Brahmins and other twice-born higher castes, Koibortta lived in separate communities, practiced endogamy and mixed only with their caste equals. Socially despised, some tried to leave their fishing profession through accumulating wealth and adopting the ritual and social practices of higher caste communities.

In the 18th century, the East India Company established business centres for trading dry fish in Nikli, Gachihata of Katiadi and Hilochia, which were all part of the then Bajitpur region (Baker, 1995). There is anecdotal evidence that one of the wealthy people of Kishoregonj, Guru Dayal, who established the district's oldest and biggest college in the early 19th century was from the Koibortta fishing caste. Koibortta fishers became one of the politically most important and socially powerful groups in parts of West Bengal and East Bengal, particularly Mymensingh, in the late 19th and early 20th centuries, both in terms of population and as a single fishing group. The 1872 and 1881 censuses show that in East Bengal, Koibortta were largely

concentrated in Mymensingh with a population of 77,798 and 94,217 respectively, and in Rajshahi with 60,440 in 1872 and 63,184 in 1881 (Risley, 1981, p. 382).

The 1901 Census recorded some 550,000 fishers in Bengal of which over 95 per cent were Hindu and Koibortta was one of single largest fishing group among all Hindu-fishing groups. According to the 1931 census, the total Koibortta population of Tangail and Kishoregong was 129,997, of which 49,639 (38%) were 'Jaliya' Koibortta. The 1931 Census recorded the total population of Bajitpur Thana at 80,827, of which Hindus accounted for 26,350 and Muslims 53,652. Among the Hindu population, 7,105 (37%) were Koibortta, which indicates their strong presence in Bajitpur (Baker, 1995, p. 19).

The Koibortta of Bajitpur and Kishoregonj were also politically important. Baker (1995) mentions that in the 1937 elections for the Bengal Legislative Assembly, there were three constituencies in Kishoregonj sub-division, of which Bajitpur (East-Mymensingh) was reserved for non-Muslims and there were three candidates for this constituency. They included Satish Chandra Ray Chowdhury (congress nominee), Birendra Kishore Ray Chowdhury (son of Zamindar Brojendra Kishore Ray Chowdhury) and Advocate Rajmohon Das (a candidate from the Koibortta caste). Baker also notes that at that time, the Koibortta were a very large and strong community in Bajitpur with about twenty to thirty thousand voters (Baker, 1995, p. 42). He further mentions that these Koibortta fishing people in Kishoregonj, especially in Bajitpur (where Krishnapur is located) belonged to the lowest caste (the untouchables' class, locally called 'jele' or 'jailla') Hindu population. At that time, Muslims who fished were often regarded as suspicious because it was thought they were recent Hindu converts. By the 1960s, following the exodus of many Hindus to India in 1945 and 1947, Muslims began to enter fishing and compete with the remaining Hindu fishers.

4.5.2. Settlement history of Koibortta in Krishnapur

Oral histories of Krishnapur village reveal that many of the Hindu Koibortta fishing families has lived in the village for at least three to four hundred years. The families of different paras or neighbourhoods (hamlet) of the village have different settlement

histories. For example, Lalkharchar, Kushahati and Railahati (paras/ wards) of Krishnapur are not as old as other wards, which date back some three to four hundred years. As in other parts of Bajitpur, several Koibortta families left for India at the time of partition, during the 1965 Indo-Pakistan war, and during and after the Bangladesh liberation war of 1971. One ward of Krishnapur named Lalkharchar was once entirely Koibortta but is now a Muslim ward, consisting of families that were originally non-fishers from other villages who migrated to Krishnapur in search of better living, especially through fishing. Among the main reasons for such migration were river erosion in their home villages, limited or no other opportunities to earn a living there and the attraction of Krishnapur as one centre of fishing.

Since 1931 the total Koibortta population of Bajitpur and Kishoregonj has declined significantly, particularly since 1947. For example, according to the 1991 census for Bajitpur, the total Muslim population was 172,432 and the Hindu only 22,631 (BBS, 1996), or approximately 12 percent of the total population. The partition of India in 1947, the India-Pakistan War in 1965 and the Bangladesh Liberation war 1971 led thousands of Hindu families, including an unknown number of Koibortta, to migrate to India. In addition, a number of communal conflicts between Hindu and Muslim communities in East Pakistan and Bangladesh compelled many Hindu families to leave the country. In the case of Koibortta and other Hindu fishing communities, migration from Bangladesh to India was very significant in the late 1960s and early 1970s. In many instances, local Muslims took up fishing and established control over the local fisheries, putting pressure on the remaining Hindu fisher communities.

The author's household census reveals a history of short and long-term settlement in the village. Thus, a majority of the Hindu fishing households trace their settlement to two to three hundred years back (about 52%) and 48 percent of households came from other villages in the region during the last 50 years. For example, among the 44 households of Railahati Ward, 27 came from Raila, 5 from Kakoria, 4 from Kusha, 2 from Fudda and 5 from other villages, with a single household only from the village itself. According to local fishers, the ward was actually named after Raila as most ward residents are from that area. In Lalkharchar ward, which is entirely Muslim, all residents came from other places, including another village called Lalkharchar, from

which Lalkharchar ward derives its name. On the other hand, all 43 households of Borobarirhati are originally from the village itself. The ward Kushahati was named after Kusha village, while Tekkahati was named after Tiakati as there were some households from those villages. The main villages from where some fishing families migrated to Krishnapur include Raila, Kakoria, Kusha, Fudda, Laun, Humairpur, Kachuakhola, Bahtinagar, Shibpur, Katai Dhanpur, Shahpur, Dattagam, Kurkarai, Gunahati, Bamaranagar and Lalkharchar.

There are several reasons for these patterns of migration of Koibortta households which have resulted in a growing spatial concentration of Koibortta and other Hindus in the Krishnapur area. As noted earlier, since 1947 there has been a growing migration of Hindus from East Pakistan/Bangladesh to India as a result of partition and post-partition political developments in the country. The effect of this migration was to reduce the size of Hindu populations in some areas which, in turn, encouraged some of the remaining families to move to areas of higher concentrations of Hindu people. This was made easier in some instances by long-standing intra-caste marriage and other links. Families moved to places where they could feel at home and where they might be able to obtain a small plot of land to build their homes. Krishnapur was a particularly attractive area to migrate as it was rich in fish resources. Since 1947, Hindus in Bangladesh have become a political and religious minority which has shaped their decisions about their future place in Bangladesh. Shifting to areas of higher Hindu concentrations where there also existed opportunities to work as fishers, has played an important role in the decisions they have made.

In Krishnapur village itself, fishers were traditionally Hindus and Muslims were farmers and involved in other professions. Some Muslims fished during the lean farming season to supplement their income but many others considered such work degrading. In contrast, the Hindu fishers of Krishnapur regarded their fishing occupation as sacred with traditional and hereditary links to the caste system. Historically, Hindu fishers were restricted to their occupation while for Muslims it was open to anyone who wished to practice it.

The Hindu fishers of Krishnapur today belong to the Jaliya Das/ Jaliya Koibortta, a section of the Koibortta caste group. There is no Chasi Koibortta or Haila Das in

Krishnapur but many of the Jaliya/Jailla Koibortta also farm. They have strong marital ties with Jaliya Koibortta of the villages of Subhadrapur, Bisnupur and Jagannathpur in Itna to the northwest of Bajitpur. According to oral testimony, there is another Das group called Hailla Das who are not Koibortta Das and with whom they have no marital ties. These Hailla Das live in the villages of Koirakanti, Buribari and Mirka, which are near to Krishnapur village. The fishers of Krishnapur share the same caste designation but are differentiated by title. These are Das, who are the majority, and a small group of Rai. Rai claim higher status than Das and seek to ensure their status through marriages with wealthier families within the Koibortta. While there is limited cultural and social differentiation among Krishnapur fishers, there is some economic differentiation among households. Though Koibortta fishers have no marital restriction within their caste group, they do restrict marriage with Shau, Gosh, Nath and Napit. There is a superiority complex among sub-castes within the Koibortta and between castes such as with the Namasudra. In the case of Namasudra, marriage with Koibortta is very restricted and they claim higher status. Koibortta people do not eat food in the houses of Wrishi, Tior, Kayastha and Muslims but in recent years, some young Koibortta are not following these restrictions.

Generally, Kayastha and Tior are not allowed to enter the main ghar of Koibortta where they worship. Food is usually given in the 'bair-ghar' ('guest house' rather than the main ghar). The Wrishi and Sau can enter the main ghar but not the kitchen. On the other hand, Koiborttas are allowed to enter the main ghar (room) and kitchens (ranna ghar) of Kayastha, Wrishi, Tior and Shau and take food. In the case of Namasudra, Kaibarta cannot enter their houses while Namasudra are allowed to enter the Koibortta's main ghar and the kitchen.

A group of 'Wrishi' (Chamar: Tanner and labourer) live in the village of Shahpur, Shau (farmers and business people) live in Bajitpur and Chatalpar, 'Tior' (who prepare 'gun', a rope or chain made of Jute, especially used for boats) live in Bajitpur, 'Jogi' (Weavers) live in Bashgari and Namasudra (who fish with traps or chai) live in Bagi, Chatalpar, Boalia, Koiralpar and other villages. If a Koibortta marries into these other caste groups, he or she is expelled from Koibortta society.

There are no Khaitriya and Vaisya in these areas and there are only a few Brahmins in other villages. Marriage between farming and fishing Koibortta is not restricted and there are no caste status differences between them. However, in other parts of Bengal and India farming Koibortta claim higher status than fishing Koibortta. For example, Gustalal Das, a fisherman of Tekkahati of Krishnapur, recounted that before 1971, a fishing family migrated to India and during a visit to Krishnapur claimed they had become farmers and raised their status to that of Mahishya Koibortta.

4.6. Conclusion

The rich wetlands of Kishoreganj in which many Koibortta live and in which the study village of Krishnapur is located have been centres of fishing for centuries and fishing remains the dominant, if increasingly insecure, activity. Koibortta settlement can be traced back several hundred years through the limited documentary sources and oral historical accounts. The next chapter looks in more detail at Krishnapur village itself, focusing on its socio-economic organisation, and gender division of labour, types of employment, demographic structure, education opportunities and the like.

¹ The wetland ecology of Kishoreganj involves the interaction between a large number of faunal and floral species and a range of different habitat types. More than 5,000 floral species are estimated to exist in Bangladesh (MOEF 1991, National Conservation Strategy, Dhaka) of which about 158 species are inhabitants of fresh water wetlands (Karim 1993, Karim, A., 1993; Nishat, Hussain, Roy & Karim, IUCN). These wetlands provide habitat to a large number of wildlife animals, act as escape cover and food safe nesting for many birds and other wild animals. They also contribute to the biological cycling and mobilization of chemical elements. The dry matter and nutrients in wetland plants and other food chains of the eco-system directly support a wealth of fisheries resources.

² In the 19th and 20th centuries there were a significant number of movements in Bengal within the different caste or sub-caste groups to secure upper caste and class status in the society, and Koibortta was one of these groups. Their mobility was both horizontal and vertical in nature. They claimed a higher position within the sub-caste itself and also within broader caste groupings. Koibortta have always claimed higher status than other fishing and non-fishing communities belonging to the Sudra caste. Generally Koibortta did not allow intermarriage with Wrishi, Shaha, Ghosh, Jogi, Muchi, Nath, or Napit, who belonged to the same Sudra caste group. In some areas, there were two sections within the 'Koibortta' called Jaliya/ Jailla/ Jele Koibortta and Haliya/ Hailla/ Chasi Koibortta and they competed with each other for higher caste status. The Chashi-Koiborttas broke away from the Koibortta between the mid- sixteenth and mid-eighteenth centuries through their professional conversion from fishing to agriculture. Thus they elevated themselves from a lower caste to an intermediary caste rank through Sanskritization and became known as Mahisyas (Usuda, M., 1997, p. 223). There were also some other Koibortta movements claiming Vaisya status and even today some Koiborttas claim Vaisya instead of Sudra status. In many cases, Chasi Koibortta claimed higher

status then jele Koibortta after taking up agriculture as their main occupation (Sanyal, 1981; Russel & Hira Lal, 1975; Bandhyapadaya, S, 1997; Hutton, J.H, 1963).

3 Isa Khan, the ruler of Bhati and the chief of the Bhuiyans was the local hero who fought against the Mughals. He was probably born in 1529 AD. His father Sulaiman Khan, a descendant of an Afghan chieftain of the region of the Sulayman ranges in Afghanistan, had settled in Bengal in the reign of Nusrat Shah and carved out an independent principality in the Bhati region comprising the northeastern portion of greater Dhaka district and the southeastern portion of greater Mymensingh district. In 1578, when Mughal Subahadar Khan Jahan invaded the Bhati region, Isa stood defiant and a fierce engagement took place between Mughals force and Isa's allies. Following that Isa established his authority over a vast territory by gradually increasing his strength and successfully transformed his estate in Sonargaon and Maheswardi Pargana into an independent domain, which comprised a considerable portion of Dhaka district, almost the whole of Mymensingh district and also a small portion of Tripura district. Katrabo and Sonargaon were his capitals. Apart from these two, Khizrpur in Narayanganj and Janglebari and Egarasindhur in Kishoregonj district were his main outposts (http://banglapedia.search.com.bd/HT/F_0096.htm).

4 Rennell, James (1742-1830) was a geographer and marine engineer who first explored the Bengal river basins and mapped them. To facilitate commercial navigation, Henry Vansittart, governor of Fort William gave him a commission in the Bengal Engineers of the company's army and asked him to make a survey of the major rivers of Bengal and their tributaries. Governor Robert Clive established a regular survey department in 1767 with James Rennell as its Surveyor General. Originally, Rennell was employed to the Ganges delta only with special objective of finding a passage suitable for large vessels from the Ganges to Calcutta. From 1763 to 1773, Rennell compiled a set of maps of Bengal for the British Government. His Bengal Atlas, published in 1779, was a work of great importance from commercial, military and administrative points of view (http://banglapedia.search.com.bd/HT/F_0096.htm).

CHAPTER FIVE

The village Krishnapur and its setting: geography, economy and society



Figure 5.1: Krishnapur village during the monsoon

5.1.Overview

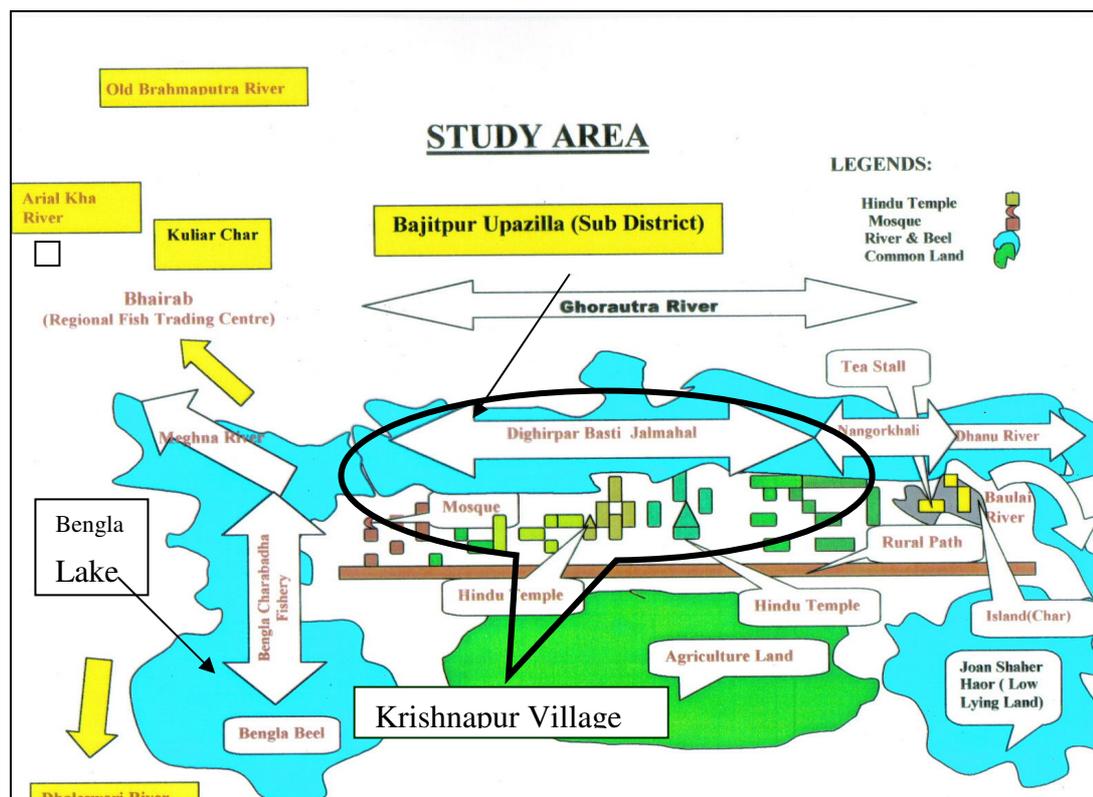
This chapter introduces the study village of Krishnapur and describes the location, physical facilities, housing patterns and other socio-economic and demographic aspects. It also looks at the gendered nature of work and relations between Hindus and Muslims and finally discusses food security and livelihood strategies and how various globalising processes are affecting them.

5.2.The village location and ecological setting

Krishnapur is geographically situated between $24^{\circ}13'$ and $24^{\circ}15'$ N and between $90^{\circ}79'$ and $90^{\circ}81'$ E and is located in the Patuli mouza of Digheerpar union in Bajitpur. The Digheerpar union consists of 11 villages and 3 mouzas and has a population of 15,000 living in 2,400 households. Before 1997 it contained 17 villages and 8 mouzas but was divided into two unions named Digheerpar and Kailag. The three main water bodies in the Thana are Bengla Lake, Gorauttra River and

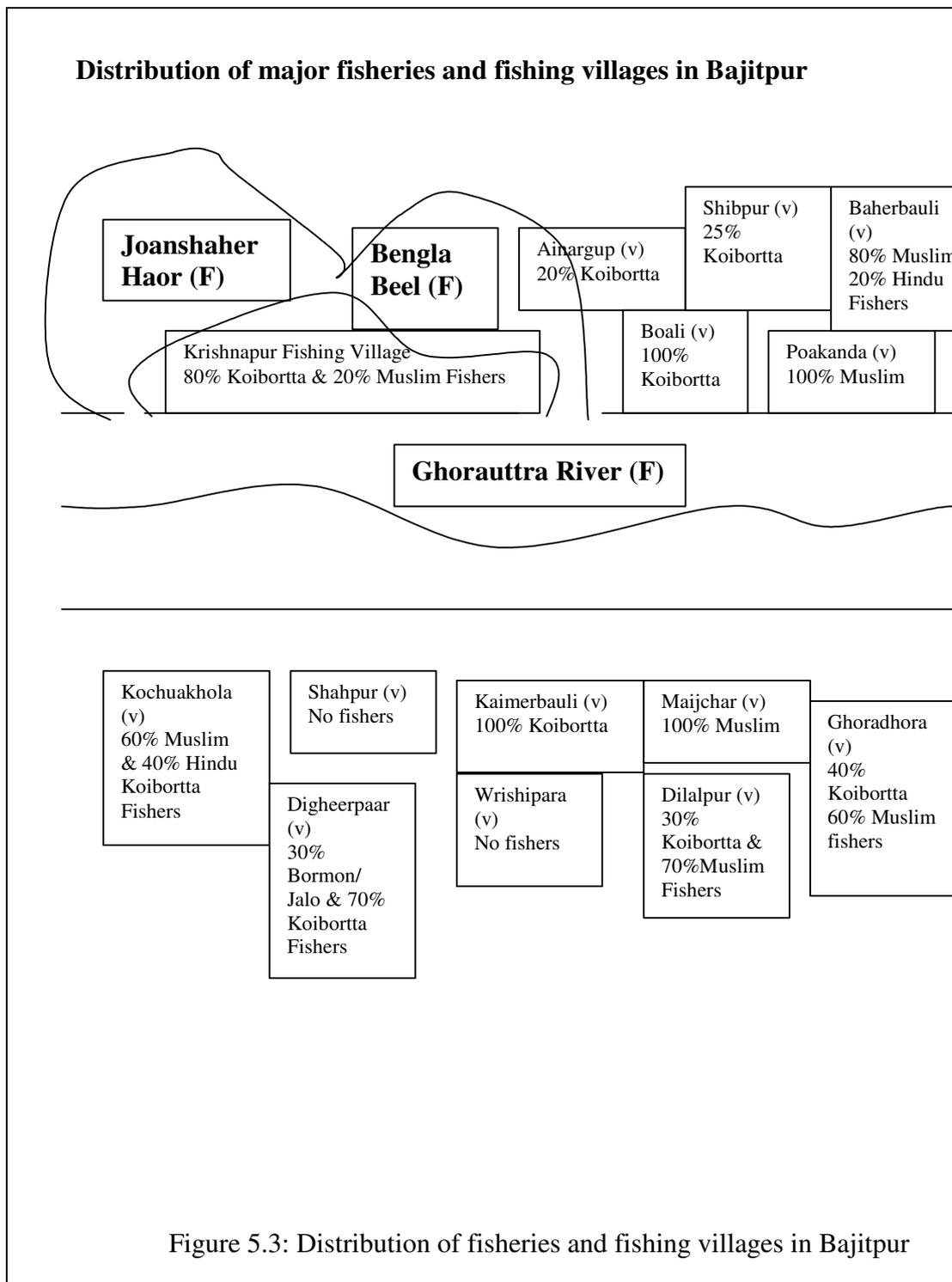
Joanshafer Depression. There are 11 mosques, 3 temple, 3 madrasha, 8 primary schools and 1 junior school in the union (appendix: 5.1).

Krishnapur lies about 5 km east of Bajitpur sub-district headquarters, which can be reached by a short boat trip from Patuli Port (Patulir *ghat*) of the adjacent village of Hilochia. It is about 30 km from Bhairab Bazar Railway junction and 45 km from Kishorgonj district town. The village covers 1.5 square kilometres and consists of two main sections both of which are built above the surrounding ground level and become flooded during the monsoon, separating the village from the mainland for up to six months of the year. During this time water depths reach 10 to 12 feet and fishing becomes the main activity. The village has seven wards locally called *hati*, which lie along the bank of the river in a north-south direction. Krishnapur and the neighbouring villages have long-established fishing communities with some ten thousand fishers living in the locality. (Figure: 5.1-5.3).



Source: Fieldwork in Krisnapur in 2002-2003

Figure 5.2: The study village



The village Krishnapur has a specific kind of landscape with its evergreen shrubs, berries and bamboos surrounded by river, lake and land depression. Rivers in the west and south and land depression in the East and North surround the village. Tidal waves (especially during the rainy season) are a constant threat to its dwellings. Since neither village nor houses are enclosed by any wall or shielded by soil protectors, villagers plant shrubs locally known as *behaiya gachh*, around their houses. Tall trees do not grow in the sandy soil of the area. One block (*bari*) of the ward of Lalkharchar is enclosed by brick walls on its south side to prevent erosion from tidal surge. Other blocks are vulnerable, if they cannot place soil under their houses to raise them above floodwaters. There is no permanent earthen road in the village but several paths, which are inundated during the rainy season. During the monsoon, fishers travel from Krishnapur to other villages by boat.



Figure 5.4: Village people crossing the river by ferry boat

5.3. Village population, family and education

A village census revealed a population of 1624 consisting of 832 males and 792 females with an average household size of 5.38. Of the total village population, 1,306 (249 households) are Hindu and the remaining 318 (53 households) are Muslim. Of

302 households/ families, 246 have a nuclear family structure (*prithak*), 55 a joint family structure (*Joutha/ Ekloge Thaka*) and one an extended family structure. Household/ family size varies from 1 to 17 members. Of the 302 households, 283 are male headed and 19 are female headed (both legal and de facto).

Family (*paribar*) is the basic social and economic unit in Krishnapur. It is the primary unit of production and consumption and also the basic component of village kinship groups. Most families live in a single house but there are some wealthier families with two or three houses. In the poorest households, kitchens are not separated from the main living area or house and some use open space in courtyards as kitchens, especially in winter.

Nuclear families consist of husband and wife with or without children with some consisting of a husband or wife with or without children (single parent family). Joint families consist of husband and wife with their married children and sometimes with their own parents and children. Most commonly such families are a grouping of nuclear families from different generations. Joint family practices are in decline because of economic pressures, land fragmentation, and parental death. Extended families are made up of a group of nuclear families and related individuals from several generations who reside together in the same household. In Krishnapur, nuclear families dominate followed by a few joint families. When a joint family breaks down into a number of nuclear families, control over fishing assets also breaks down. In some cases, separated families both farm and fish. Parents still retain control over their married sons through inheritance, village social standing and networks of support.

The general level of public education is low by national standards. For example, the rate of literacy in Krishnapur is about 36 percent compared with 53 percent nationally (2001 census figures). About 47 percent of the village population is totally illiterate. The literacy rate among the Hindu is 40 percent, double that of Muslims at 20 percent. In addition to public education, there is a *maktab* (an informal Islamic education centre) in Lalkharchar ward run by the mosque and Muslim children receive Islamic education during the morning. Of the 36 percent literate population,

27 percent have primary education, 7 percent have secondary education and about 1 percent higher secondary and above.



Figure 5.5: Village primary school: the only educational institution for children

5.4. The village economy

The fishers' households of Krishnapur sustain their livelihoods through a combination of fishing and farming (water and land). It is mainly local wealthier households of the village who own private farming land and use their family labour and sometimes non-family labour as sharecroppers. The main farming season is six to seven months a year followed by fishing on nominally common property water resources for four to five months of the year. Fishing is one of the most important sources of livelihood for the majority of poorer households but access to common property fisheries resources is restricted through the government implemented leasing system (see NRSP, 2004). 10,000 fishers are said to live in this locality and fish in Joanshaher depression and Bengla lake during the monsoon and in the Ghorauttra River, which is a part of the Meghna (for more details see the description of each of these three waterbodies given in chapter-7), during the dry season. Some local fishers

also fish in other depressions including Adkubla, Alenjure, Mitamoin, Dubgram, and Bed-latenneshwar. Fishers are also occasionally hired on a fixed wage basis to catch fish in other waterbodies of the neighbouring Upazilas. From February to March, large low-lying stretches of land of the area are cultivated and during the monsoon become flooded with waters rising 10 to 12 feet.

According to the Bajitpur Thana (Upazila/sub-district) Fisheries Officer (TFO), there are thirty two governments owned waterbodies in Bajitpur, of which nine are above 20 acres and twenty-three are below 20 acres. According to existing government policy, all the waterbodies above 20 acres are under the District Commissioner and those below 20 acres are under the Directorate of Youth. Some basic information on the fisheries of Bajitpur¹ is given below in table: 5.1.

The Assistant Commissioner, Land (AC Land), Bajitpur provided a list of water bodies in Bajitpur from the 6th Register of the Bajitpur sub-district land office. According to the register, the largest waterbodies in Bajitpur is the Bengla-Charabadha waterbody (1363.5 acres) followed by Digheerpaar Bosti waterbody (437.38 acres). Overall, there are 32 waterbodies i in Bajitpur under the leasing system administered locally by the Ministry of Land and the Ministry of Youth. Table 5:2 provide a list of the waterbodies, their size and location in Bajitpur where Krishnapur is located.

The fishers of Krishanapur fish mainly in a number of sections of the Ghorauttra River. Each of the sections has a different name and is leased/ sub-leased out separately. Bengla Lake, which is connected to the Ghorauttra River, and the Joanshaheer Depression, links up with the river during the monsoon. On the Ghorauttra River, Krishnapur fishers fish mainly in Bengla-Charabadha waterbody, Nagnarkhal waterbody and Digeerpaar Bosti waterbody. Others important Jolmohols used by the fishers of Krishnapur include Maijchar waterbody, Nuahata waterbody, Baherbauli-Ainargup waterbody, and Hilochia Khal Patty Bandh waterbody.

Table 5.1: Basic information on fisheries of Bajitpur

Annual fish demand	7883.24 metric ton
Annual fish production	4612.88 mt
Amount of fish from natural sources	1347.94mt
Rivers flowing through Bajitpur	Ghorauttra, Daleshwari, Meghna, Daer Nadi
Waterbodies above 20 acres	9
Waterbodies below 20 acres	23
Arots (fish selling center)	12
Fishers	2200
Fisher families	510
Ice mills	10
Matsyjeebee Samity (Fishers' Associations)	14
Percentage of fish obtained from natural sources	25-30%
Major <i>haors</i> in Bajitpur (big floodplains/oxbow lakes/land depression)	Joanshaheer Haor/Adkubler Haor/Elenjuri Haor

Source: Thana Fisheries Officer (November 2002).

Table 5.2: Water bodies of Bajitpur

SL	Name of the water body	Size/area in acres	Union/location
1	Beengla-Charabadha Jolmohol	1363.57	Digheerpaar, Dilalpur Homairpur, Majjchar
2	Digheerpaar bosti Jolmohol	437.38	Digheerpaar
3	Baherbauli-Ainargup Jolmohol	301.80	Majjchar
4	Nouhata Fishery	260.00	Majjchar
5	Nagnarkhal Jolmohol (Nangarkhal)	171.26	Dilalpur
6	Majjchar Jolmohol	135.75	Majjchar
7	Pabiadoh Jolmohol	68.67	Shararchar
8	Deobhangar Lake	22.17	Kailag
9	Hilochia Khal Patty Bandh Jolmohol	21.86	Hilochiao
10	Bajitpur Boro Dighee	15.02	Pourashabha
11	Sharsher Dighee Pukur	13.63	Dilalpur
12	Dasher Nadi	13.50	Majjchar
13	Khandaker Dighee	9.65	Dilalpur
14	Barudia Patty Bandh	6.98	Boliadi
15	Digha Lake	6.12	Homairpur
16	Guzar Lake	5.09	Digheerpaar
17	Arang Jalkar	3.33	Pourashabha
18	Bajitpur Choto Pukur	2.60	Pourashabha

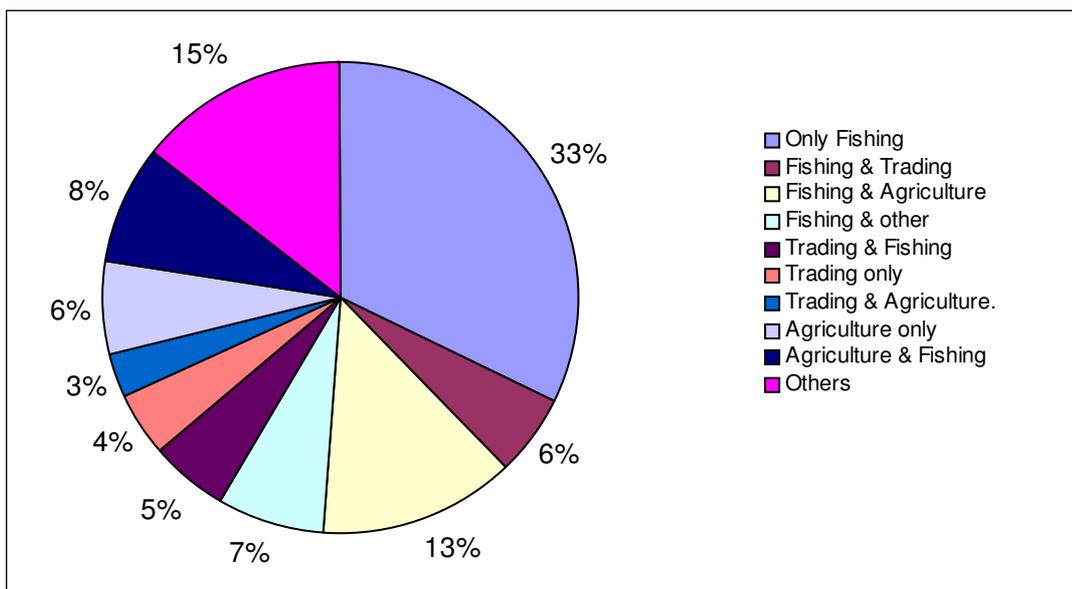
19	Moradia Khal Lake Patty Bandh	2.13	Digheerpaar
20	Poilanpur Pukur	1.35	Pourashabha
21	Pearipodder Jolmohol	1.24	Pourashabha
22	Misri ThakurPukur	1.21	Pourashabha
23	Louhogau Pukur (1)	1.16	Hilochia
24	Nabab Pukur	1.08	Pourashabha
25	Louhogau Pukur (3)	1.01	Hilochia
26	Louhogau Pukur (2)	0.82	Hilochia
27	Dari Ghagtia Pukur	0.79	Pourashabha
28	Bajitpur Bazar Pukur	0.75	Pourashabha
29	Bhagalpur Pukur (1)	0.53	Pourashabha
30	Hilochia Pukur	0.53	Hilochia
31	Digheerpaar Pukur	0.42	Digheerpaar
32	Bhagalpur Pukur (2)	0.29	Pourashabha

Source: Assistant Commissioner of Land, Bajitpur (December 2002)

The major occupation in Krishnapur is fishing. About 58 percent (176 households) of the village household heads are primarily involved in fishing, about 13 percent (39 households) are fish traders, 14 percent are farmers and the remaining 15 percent are involved in service, business etc. The majority of the households combine fishing and agriculture. For example, only 33% of households are actually headed by full-time fishermen yet many more participate in fishing. Families primarily involved in fishing also have secondary occupations. Thus, of 176 fisher households, 97 fish only, 17 fish and trade, 40 fish and farm, and the remaining 22 have other secondary occupation besides fishing. Those 39 ‘non-fishing’ households are primarily fish traders but they also have some involvement in fishing, agriculture or other activities. Few household heads are involved in activities other than fishing, fish trading or farming (Figure: 5.6 & Table-5.3). These include teaching, day labourer, carpentry, tailoring, medicine, other government and non-government services and small- scale business. Most fishers use traditional fishing equipment and fishers’ incomes vary according to the types of fishing gear used, fishing practices engaged in and variations in fishing seasons, which cause changes in fishing yields.

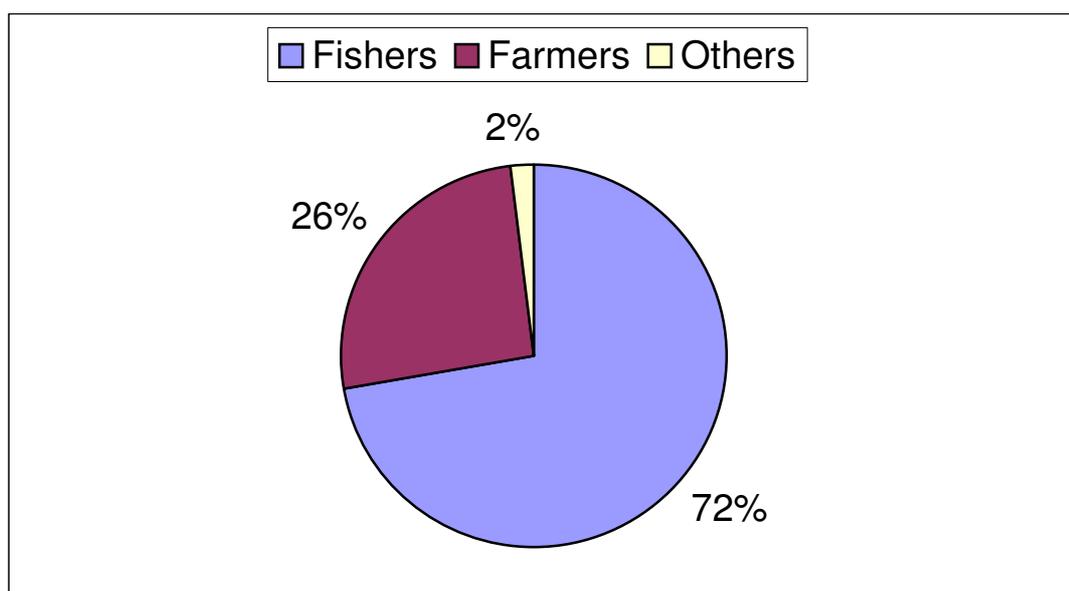
For example, in Railahati, out of 44 households, 39 are directly involved in fishing, 10 have no boats and nets, and 5 have nets but no boats, which they rent from others. About 82 percent of households have direct or indirect involvement in fishing or

fishing related activities. Of 302 household heads, 218 had fathers who were fishers and 78 had fathers who were farmers (Fig: 5.7). Except in Lalkharchar, the majority of the household heads' fathers and/ or grandfathers of other wards were fishers. In Lalkharchar, of 53 households, 44 had fathers and grandfathers who were farmers. This is mainly a Muslim ward and unlike other wards, has no tradition of fishing. Inhabitants of the ward took up fishing after losing their land.



Source: Fieldwork in Krishnapur in 2001-2

Figure 5.6: Distribution of household heads by primary and secondary occupation



Source: Fieldwork in Krishnapur in 2001-2

Figure 5.7: Occupation of forefathers/ ancestor of the household heads

Table 5.3: Distribution of fishers by primary and secondary occupation

Name of the para	Only fish	Fish + Trad	Fish + Agri	Fish + other	Trad + Fish	Trad only	Trad & Agri.	Agr only	Agr + Fish	Others	Total
Railahati	27	2	4	6	2	0	0	0	0	3	44
Kushahati	14	3	4	2	2	1	1	0	5	6	38
Tekkahati	15	2	3	4	2	5	0	4	3	2	40
Companyhati	9	2	10	4	2	3	6	3	6	6	51
Modoillahati	13	2	3	2	3	3	1	0	0	6	33
Barbarihati	9	3	8	2	2	0	0	7	4	8	43
Lalkharhar	10	3	8	2	3	1	2	5	6	13	53
Total	97	17	40	22	16	13	10	19	24	44	302
Percent	176 (58%)				39 (13%)			43 (14%)		44 (15%) (nt)	302

Source: Fieldwork in Krishnapur 2001-2002

5.5.Fishing calendar

The fishers of Krishnapur divide the year into four fishing seasons: over wintering dry season, spawning migration season, nurseries grow-out season, and flood recession season. The over wintering season is from December to March when fish do not migrate and no heavy fishing of breed stock and juveniles in river mouths and the lakes occurs. The spawning migration season is from April to June when fish move from deeper to shallower waters. Some species breed in rivers, some in the flood plain and some in both river and floodplains and swim from/to rivers to lakes/ flood plains. The nursery grow out season is from June to September when fishes grow rapidly and are found throughout the region, despite high predation. The flood recession season continues from September to December, when fish begin to shift to deeper waters to escape being caught. Boishakh-Jaistha (April-May), Asharh-Bhadra (June-August), Katrik-Augrahan (Oct-Nov), Poush-Magh (Dec-Jan) are the seasons during which fishers of Krishnapur catch different types of fish using various types of nets and boats.. During Kartik –Augrahawn- Poush and Magh, is the best fishing time for the fishers of Krishnapur (Table 5.4). Fishers catch large quantities of fish and earn their highest income with which many can save some money to meet their family needs of the lean season when they have no fishing or have less income from fishing. Many fishers spend their savings during the lean season from Asharh- to-Ashwin (June-Sept), when there are less fish. During this time, most fishers become idle and spend their time sitting at home, gossiping at the tea- stall, playing cards, repairing nets, visiting relations.

Table 5.4: Yearly fishing cycle of Krishnapur fishers

Month	Fishing related activities	Other activities
January/ Poush-Magh	Less fishing because of less water and less fish in the waterbodies. Pile/Kata fishing starts. Fishers, mostly old who do not like agriculture work or cannot do that type of work, do some fishing and hardly get 40/50 tk/ per day.	Most of the fishers work as agriculture laborers because this time agriculture needs more laborers for the preparation of land. Wage is 70 taka per day.

February/Magh-Falgun	Less water and less fish. Can hardly earn 40/50tk per day Fishing is not lucrative for the majority of the fishers. Pile/jag fishing continues.	Day laboring for land preparation. Wage is 80tk per day without any food
March/ Falgoon-Chaitra	Less water and less fish. Fishing with big nets starts during this time. For big nets, the leaseholders prefer to share the catch instead of fixed rent.	Paddy planting and winnowing. Wage is 50-55tk.per day without any food.
April/Chaitra-Baishakh	Fishing season starts. Some fishers' fish with Kona Ber jal and some use other big size of nets to fish Jhatka, Chapila and Chingri fish.	This is peak time for agriculture. About 50% of the fishers do some agriculture as well as work as day laborers. There are about 60/70 fishers in the village who work as day laborers in agriculture and get 50/60 tk/perday during lean season and 80-120tk/perday during peak season. Some fishers also work as contact laborers for about 8 months period of time and get 7/8, 000 tk with 3 times meal. There are about 15/20 people in the study village who work as contact laborers.
May/Baishakh-Jaistha	A small numbers of fishers with special nets do some fishing.	Peak time for agriculture. Fishers are found very busy for harvesting paddy and other crops. Paddy harvesting continues.
June/Jaistha-Asharh	Rainy season starts and river and haor become full of water. Only a small number of fishers fish in the river during this time	No agricultural work.
July/Asharh-Srabaon	A few numbers of fishers who have big nets can fish in the river but majority of the fisher with small nets fish in the floodplains. Some fishers fish by hooks. Fishers can earn 100-125tk/ per day during this time.	No agricultural work.
August/Srabon-Bhadra	Fish in the haor.	No agricultural work.
September/Bhadra-Ashwin	Fish in the haor.	No agricultural work.

October/Ashwin-Kartik	Fishers return to the river for fishing because this time haor starts drying. Fishers usually fish in their sub-leased water areas or other areas of the river by paying some rent/toll to the leaseholders or sub-leaseholders.	No agricultural work.
November/Kartik-Agrahayan	Fish in the river. Some fishers start preparation of Pile/Jag: a special method of fishing through developing a temporary fish sanctuary where fishes are given feed and other physical environment. For pile fishing fishers get 40 % and leaseholders get 60 % of the catch value.	No agricultural work.
December/Agrahayan-Poush	Fish in the river. About 30-40% fishers fish with their small net. They mainly catch small species of fish. Fishers' usually fish by paying some toll to the leaseholders. Leaseholders employ some guards to protect illegal fishing. Leaseholders take 20tk per day for fishing with small net and 50tk per day for medium net. It continues up to February.	Prepare land for agriculture.

Source: Fieldwork in Krishnapur 2001-2002

5.6. Income, landownership and types of work in Krishnapur

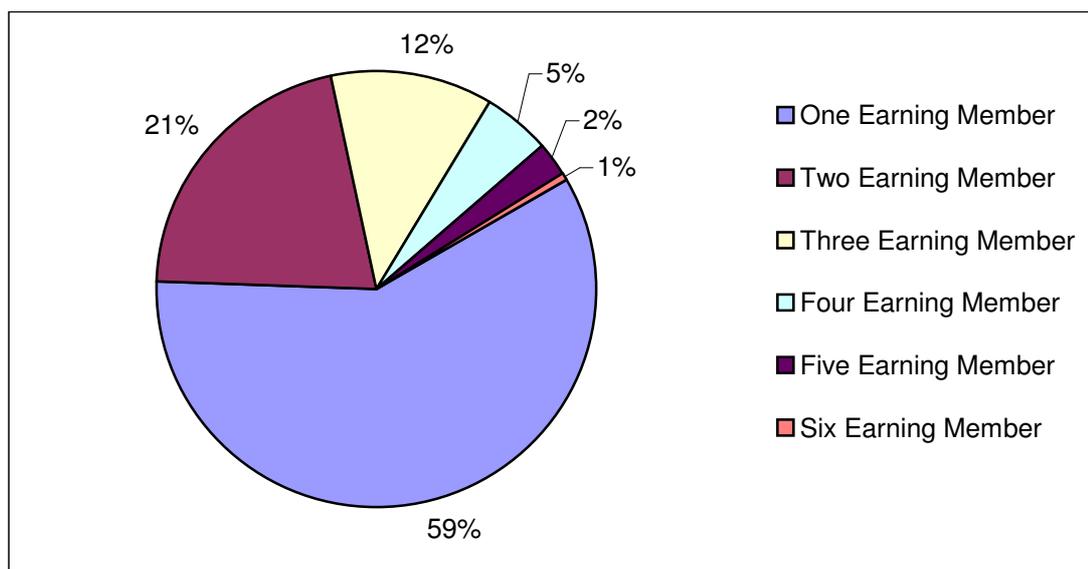
The fishers of Krishnapur fall into three main categories: professional (traditional) fishers, part time or seasonal fishers and subsistence fishers. Most are professional and some own nets and boats and employ poor fishers, who do not have any nets and boats, on monthly or daily wage or share of the catch basis. Part-time or seasonal fishers are those who derive only part of their income from fishing. They have few fishing assets and rely on family labor or relatives. Some fishers borrow money (dadon) from the fish traders (beparis) and fish wholesalers/ commission agents (aratdars) to make nets and boats and to cover other costs. Finally, subsistence fishers

are usually the poorest do not have their own nets and boats and work for other fishers, getting a share of catch. Some work as general labourers.

Fishers' incomes vary across and within the above categories. Better-off fishers (28.5 percent) earn between 5, 000 tk. and 8, 000. tk per month, medium-income fishers (41 percent) earn from 3, 000 tk. to 5, 000 tk. per month, and poorer fishers (30.5 percent) earn from 2,000tk to 3,000tk per month. These income figures are based on verbal reports of earnings from fishing and non-fishing activities. Earnings estimations were based on two weeks in the fishing peak and low seasons respectively. Better-off fishers include a small number of professional fishers with big nets, a boat, other fishing equipment and small plots of land, some fish traders and wholesale commission agents. They are able to meet most of their basic needs and lead a modest life. Middle-income earners include fishing households who own a single net or boat and who sometimes rent a boat or share nets with others. They may also own small plots of land. The poorer fishing households live from hand to mouth earning between 2, 000 tk. and 3, 000 tk. a month. Most own no nets, boats or land, often sharecropping other's land. Most rely on taking advance from local fish traders, commission agents and moneylenders to see them through the year. Case studies conducted among a cross section of fishers, fish traders and commission agents give some idea about their income and expenses. For example, Ramkrishna (55), a poor fisher of Krishnapur has a family of seven and has one Patni jal (worth 5, 00 tk.) but no boat. On the day interviewed he earned eighty taka (80 tk) from fishing, from which he spent seventy one taka (71 tk.) for buying rice (48 tk.), vegetable oil (4 tk.), kerosin oil (4 tk.) and tobacco (3 tk.). He had earned taka 150 and 180 over the previous two days from which he bought other essentials and repaid money received from the fish traders. Like him, there is another small fisher named Krishnadhan (40) with a family of seven and who owns one net (worth 6, 000 tk.) but no boat. He had rented a boat at 1, 600tk for 4 months. The day he was interviewed he earned 75tk from fishing and 64tk to buy four kilograms of rice (4x12), onion (4 tk.), salt (4 tk.) and vegetable oil (7 tk.). For previous three days, he earned 150 tk., 70 tk and 60 tk., which he spent on repaying loan, buying medicine, vegetables, sutki and other essentials.

This picture is different for local fish traders and commission agent. While talking with a number of fish traders on the river when they were buying fish from the fishers, one named Jogeshwar (50) said he had been trading fish for the last 20 years. He had three Muslim partners and an investment of 75,000 tk. Beside this, he owned one boat (worth 40,000 tk) and a net (worth 15,000 tk.). His group got fish from 40-50 local fishers with whom they had financial transaction. Everyday he supplied 100 to 150 kg of fish to Bhairab and Kuliarchar fish wholesale commission agents from whom he took 3-lakh taka loan. He used his own boat for collecting fish and received 50tk per day as rent from the ezmalı (their group). He also rented out his net to other fishers. He informed me that on average, he earned 6-7,000 tk a month.

Another local small fish trader (choto paikar) named Jitendra (45), who bought fish from local fishers and sold in the local retail fish market, earned only 80-150 tk per day less than Jogeshwar. He has a family of five with a small boat but no net. He mostly sold his fish to the local fish market but sometimes supplied fish to Jogeshwar for which he earned 5-10 tk profit per kg. He has received a small amount of dadon from Jogeshwar. Beside fishers and local fish traders, the commission agents have a different mode of earning and expenses and a number of Bajitpur wholesale commission agents were interviewed during the peak trading season. Ratan Kumer (40) informed me that he had been a wholesale commission agent for last 5 years with another partner. They were supplied by 40 to 50 local fishers, including from Krishnapur, to whom he distributed two hundred thousand taka as loan. Trading is done from a 'godi' (fish transferring centre) in the wholesale fish trading centre (arot) and everyday morning local small paikars and fishers bring their fish to his trading centre. He received 5 tk. as commission for sale of 100 tk. fish and after paying mintis (labourers who load and unload fish and take weight), arot tax, and covering the office expenses, he could earn 5,00-1,000 tk. a day, depending on fish quality and time of year.



Source: Fieldwork in Krishnapur 2001-2002

Figure 5.8: Distribution of households by number of earning members

Some family members are both farmers and fishers and about one third of households having more than one income earner (Figure: 5.8). Income earners include the father with his adult son or young child. Earnings are not always from the same source and the father may be involved in agriculture and the son in fishing, fish trading, business or other services.

Land ownership is an important indicator of economic and social status in the village. 55 percent (167) households have no land and only 3 percent (9) have more than 5 acres. Of these 167 landless households, 97 are entirely dependent on fishing. Among landholding households, 8 percent have less than 50 decimals (shotok), 14 percent between 50 and 100 decimals, 11 percent between 100 and 200 decimals and 9.27 percent 200 to 500 decimals.

Besides fishing, fish trading and farming, there is a small 'modern' sector, which includes government and non-government workers and non-fish businesses and traders. One or two households obtain income from family members in other parts of Bangladesh and overseas. People in this sector are regarded locally as an economic aristocracy.

With the exception of a small minority of better-off villagers, most find it difficult to accumulate money for investment or other purposes. Money 'burns a hole' in people's pockets and the smallest note is immediately spent. A village income balance sheet would show a permanent deficit with many households reliant on credit of one kind or another. Illness, dietary deficiency and poor hygiene are facts of everyday life. Life is a daily struggle to earn enough money to buy rice, and the irregular nature of fishing makes this struggle even harder. Fishers usually sell the fish they catch to buy rice and other staples. While the poorest spend a high percentage of their income on basic staples, they also purchase tea, toys for children, spend money on card playing, cigarettes, alcohol or movies.

Food constitutes the most essential expenditure of fishing people. A typical meal is made up of rice or rice water, accompanied by some vegetables, fish, dry fish or green chillies with a piece of onion. As the villagers are mostly fishers, fish is regarded as an important part of their daily meal. However, in the past, they used to eat more of their catch than they do now. People of all economic classes eat fish regularly. At certain times of the year, when there is no other food and other income sources, poor people (both traditional and non-traditional fishers) must catch fish to eat to survive. Poor fishers consume the low-grade part of their catch and sell the rest to buy other essentials. Rich fishers dry some of the fish, if the catch is exceptionally good. Poor families also dry any available fish and keep it as a reserve. Dry fish provides variety, when fresh fish supply is limited. Families who fish mainly for their own consumption are unlikely to invest as much money as professional fishers in fishing gear. They use very simple and inexpensive gear for monsoon fishing (fishing hooks/ *borshi*, *Jhaki jal*, etc.) and dry season fishing in shallow waters (*Chai*, *Polo*, *Thela jal* etc.). Fishers also buy fish for their own consumption. A sample survey of 30 fisher families estimates the weekly fish consumption during the peak season (See Table 5.6).

Table 5.5: Weekly fish consumption by different categories of fishers

Categories	Ate fish (fish caught by H.H Members)	Ate fish (bought from the Market)	Did not eat fish	Total no of Respondents
Better-Off	5	4	1	10
Middle	8	1	1	10
Poor	6	0	4	10

Source: Fieldwork in Krishnapur 2001-2002

During the lean season (Jan-Feb), fishers' incomes decline and poor fishers mostly eat cheap cereals called 'muta chaler bhat' (low quality rice). Rice is an essential expenditure, which can represent half of household income. People talk about the price of rice, qualities are compared, and it is common to show a visitor the rice that has just been bought. People complain about the perpetually rising price of rice. Vegetable prices are quite high and many poor fishers rarely eat vegetables apart from their own produce. They buy chillies, red peppers, onion and essential spices. They also do not buy clothes very often and most of the times wear threadbare garments. A 'sari' (women's main dress: a 5-6 metre long clothe for wrapping the women body) costs 300 to 500 tk. and a man's shirt and 'lungi' (men's main dress for wrapping the bottom part of the body) about 300-400tk. Medical costs are very high, even if they consult village doctors (folk healers). If a woman stops producing milk, she has to buy expensive powdered or cow-milk to feed her baby. Children sometimes have to buy books for school. From time to time fodder has to be bought for the cow and the house needs regular maintenance.

Inviting guests at different festivals, buying new dresses for children, stocking the home with necessary items, including a television and furniture, providing children with an education, giving dowry when a daughter marries and so on have great social value in village society. These special items of expenditure are a heavy burden on the household budget.

5.7. Fishing and non-fishing assets

Access to fishing gear is central to the livelihood strategies of Krishnapur fishers. They utilise a wide range of fishing nets, which are designed to catch particular species, divided into several categories of which the main ones are drift nets, seine

nets, drag nets, cast nets, dip nets, stake nets, and fixed purse nets. There are also various types of boats made from local trees are designed for different fishing purposes, cargo haulage, and passenger traffic. Among the boats, 'kushsha' and 'dingee' are most common. The 'dingee' is the second largest fishing boat with an average length of 20ft. and a width of 3-4 ft, while the 'Kushsha' is the smallest at 15 ft. long and 2.5 ft. wide. Professional, part-time and non-fishers (including fish traders, farmers, service holders and businessmen) own or use different types of fishing equipment

Ownership of nets and boats, which is unevenly distributed in the village, takes two forms: private and group sharing. In addition, some fishers hire equipment. Only 33 percent of households have no fishing equipment, while the majority (68 percent) own some fishing gear such as a boat, net, chai or hook (borshi).

Krishnapur fishing households own very few non-fishing assets such as agricultural land or livestock. Three types of income generating non-fishing assets are important: homestead and agricultural land, agricultural implements, dairy and poultry. Many families rear fowl for commercial purposes with some households rearing hundreds of ducks and swans. Ownership of non-draft animals such as goats, sheep and poultry does not depend on the ownership of land, as is the case with draft animals (cows and buffalos). A sample survey of 80 households in the study village revealed that 5 percent had no non-fishing assets and 60 percent had non-fishing assets or implements worth less than 5, 000 tk. The remaining 35 percent owned non-fishing assets (dairy and poultry) of more than 5, 000 tk worth.

The people of Krishnapur work in agriculture, both as a primary and secondary occupation. A majority of households, including those with the largest land holdings, work in the fields during the months of Baishakh and Jaistha (see figure: 5.9). Fisher families mainly do single cropping, as their farming areas are regularly flooded for about 6 months of the year. Rice and wheat are the main crops taking up 70 percent and eight percent of gross cropped area respectively (1983-84 Agricultural Census). Fishing families with land try to supplement their earnings through farming and sometimes by leasing out land. Fishers without land usually work as hired labourers. 55 percent of households have no land (see figure: 5.10) other than homestead land

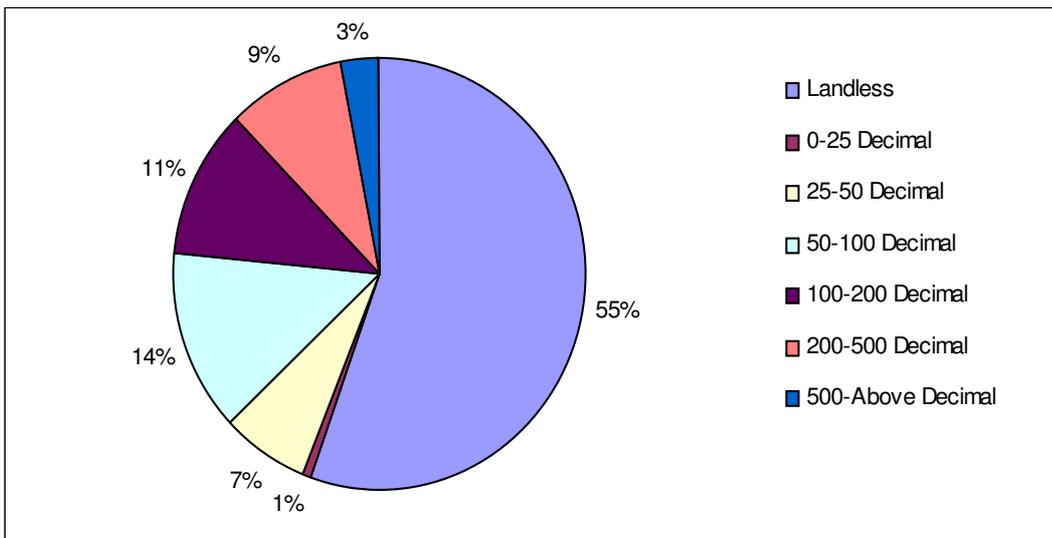
but many work as hired labourers during Baishakh and Jaistha. A few work as hired labourers (chukti based) winnowing on paddy fields in the land depression.



Figure 5.9: Fishers harvesting in the paddy fields

Winnowers earn 100-to150 tk/day and ten labourers can winnow one acre of land a day. During the month of Falgun, 60 to 70 fishers from Krishnapur work as hired labourers (locally called ‘Muni’) and do paddy plantation and harvesting work from which they can earn 50-to 60 tk. per day without meal. Only 113 (37 percent) household heads farm as their primary and secondary sources of income.

Other household heads are primarily fishers or fish traders with some involvement in agricultural activities. Compared to other wards, the families of the Muslim ward of Lalkharchar are mainly farmers. Of 53 households of this ward, 29 are directly engaged in farming and the remaining 24 are landless. The distribution of agricultural land by household is shown below:



Source: Fieldwork in Krishnapur 2001-2002

Figure 5.10: Ownership pattern of agricultural land

The organisation of agricultural production takes several forms. One arrangement is ‘chukti or chukaiya’ (contract based) where land is cultivated by village and other landowners or family labourers and by families and hired labourers. Here the contract farmer bears all the cost involved in the production process and the landowner gets 10 to 15 maunds of rice from each crop (figure: 5.11-5.14).



Figure 5.11: Fishers drying straw for cattle

A second arrangement is called 'aiddha chukaiya' (sharecropping) where the landowner and the cultivator cooperate. It works in two ways. Either the sharecropper (bargadar) bears all costs involved with production and receives two thirds of the total product or both landowner and sharecropper bear the costs equally and share the product equally. Under the 'pattan or bandhak' system a landowner leases out his land for a period of one to three years. A fertile piece of land of 100 decimals is leased out for about 20 thousand taka for three years with one crop a year.

74 fisher households cultivate land under the chukti system, 14 under the aiddha system and 9 landless fisher households work under the 'pattan or bandhak' system. Moreover, a significant number of poor fishers work as hired agricultural labourers during the fishing lean season.

Many of the landless fishers work as seasonal agriculture labourers on the land depression in the batan, which is a temporary encampment or place for farming agricultural land. Rich farmers generally hire labourers for 8 months from mid-October to mid-May and they are usually paid 6 to 8, 000tk with meals for the season. There are about 20 Krishnapur fishers who work as batan labourers and they usually live at the batan and visit their families two to three times a week.



Figure 5.12: Fishers transporting harvested crops

5.8. Village infrastructure: housing pattern, household utensils, water and sanitation

The houses of each ward, in some cases two wards are attached to each other and usually built a little upland from the flat land. The construction and design of the village houses is adapted to such weather and natural conditions, but when showers are heavy roofs bend, exaggerating their curved cornices and dislodging palm leaves. Some of the villagers take precautions against rain and flood. One type of tall tree locally called Rain tree and some other tall tree species mark human habitation, where the village homesteads are punctuated by banana groves and kitchen gardens. Mud-built structures are absent because of the sandy nature of the soil. Straw and tin are the most common building materials with mud used in some cases for plastering over straw and bamboo thatches. A village home is generally a cluster of several houses and is used for different purposes. Separate dwelling houses, kitchen, storehouse, and cattle sheds are found mainly in wealthy households, as poor fishers cannot afford them. Poor fishers especially repair the roofs of their homes every year. Bamboo made fences and straw and palm leaves are used widely to protect their dwellings from flood and tidal waves. The roofs of houses are sloping and undulating but peaked at the centre (figure 5.13).



Figure 5.13: Village houses

A random sample survey of 80 fishing households shows the distribution of different types of houses in Krishnapur. About 76 percent of fishers live in thatched houses (costing 1, 000 to 10, 000 tk.), 9 percent live in bamboo, hay and straw made houses (costing 5, 000 to 15, 000 tk.), 12 percent live in tin roof and straw/bamboo fenced houses (costing 15, 000 to 30, 000 tk.) and the remaining 3 percent live in floor *pucca*, half wall/ tin fenced and tin roofed houses (costing 30, 000 to 120, 000 tk.). The average living space of a poor family is between 0.5 and 1 decimal (.05 and 0.1acre).

The household utensils/ materials used by fishers include cutting equipment made of iron, aluminium and earthen utensils, wooden furniture and consumer durables. Iron made cutting equipment includes the chopper the axe and spade. Aluminium and earthen utensils are widely used during household work. Only a few houses have earthen plates locally known as 'bashon' while almost all jars and pitchers are made from clay. Some well- to- do families use aluminium and bell metal utensils, and ceramic plates and dishes (teacups, urns, saucers etc). Spoons are used rarely. The villagers use their fingers to eat. The household furniture includes cabinets (almirah), tables, chairs and benches. A few families have furniture made of better wood and fine art decorated. Pictures of various animals, birds and plants are sometimes drawn on the frame and legs of bedsteads by skilled artisanals. Some households have black and white television sets and a few have watches, radios and bicycles.

The main source of water is the river Gorauttra, which is used for cooking and washing clothes and other utensils. Some fishers use river water for drinking. In Krishnapur, there are only 18 tube wells for 302 households (1,624 people) of which 16 are private and the Mosque and school own the other two.



Figure 5.14: Open-air toilet in the village

There are only six sanitary (pucca) latrines / toilets, five half-pacca latrines (using rings) in the village and sixty-six kacha latrines made of bamboo and coarse cloth made of jutes on four pillars of bamboo in an open place. These Kacha toilets do not have any rings and during the monsoon excrement is discharged into the water. Most toilets are close to the river and near the places where people bath, wash clothes and utensils and take water for cooking (see figure: 5.14). Overall, in Krishnapur, for every four households, there is only one toilet, that is, one toilet for twenty-one persons and many households have no private toilet at all.

5.9. Fish catch and consumption

Fish is a crucial element in the diet of a population, particularly in countries where the staple crop (such as cassava or plantain) is particularly low in protein. In Bangladesh, fish plays a significant role in both providing fish food to the local population and earning foreign exchange. Official statistics (BBS, 2001) show that with an increase in national fish production fish consumption has also increased during the last two decades with per capita daily fish consumption increasing from 22 gm. in 1981 to 38 gm. in 2001. Ali et al. (2003) report higher consumption for pond owners and richer households. However, the rural poor, including full time fishers,

consumed the same amount of fish in the late 1990s as in 1982 (Thompson et al., 2002). Chowdhury (2000) mentions that freshwater fisheries are crucial since access to common property provide a vital source of essential nutrients and means for increasing household incomes. Of particular importance in this regard are the small indigenous fish species (SIS) which contribute up to 80% of the fish eaten by low income households in the rural areas (also see Capristrano & Stackhouse, 1997).

The poor fishers of Krishnapur catch fish but cannot afford to take fish as a major item of their diet. In the past, fishers consumed more of their catch than they do now. Today, they mainly eat 'small indigenous species' (SIS) of small fish ('chotomaach') rather than large fish or 'boromaach'. Of the 260 species of freshwater fish in Bangladesh, over 140 species are classified as SIS (<http://www.itdgbangladesh.org/knowledge/reports/reports.html>). In contrast, boromaach (generally considered to be a commercial crop, either wild caught species such as Hilsa or exotic/imported species of carp fishes), are mostly consumed by richer people.

Case studies on the dietary habits of poor fishers of Krishnapur show that around 80 percent of fish eaten are small indigenous species. Eight fishers were interviewed at a fish landing spot in the morning about their diet during the previous three days. In 22 out of 48 meals (lunch and dinner), they ate small fish with rice, in 17 meals they ate dry fish (sutki) with rice (small dry fish) and in 9 meals, they ate only vegetables with out any dry fish or any small fish. Chicken curry is a special item and only one fisher took one meal with chicken when he had guests (see Appendix: 5.2).

When fishers return from fishing in the morning, they sort their catch on the riverbank or lake by size and variety. The men keep part of their catch, mostly the small fish, for their own consumption and sell the rest. Rich fishers use a part of their catch for their own consumption. Sometimes part of the catch is processed as dry fish. Poor fishers also dry some fish (mostly low quality/ rotten fish) and keep it as a reserve. Fish is preferred over meat in almost every household. It is an integral part of the diet on all festive occasions among Hindus. Among Muslims sending large size fish to the bride's residence along with sweets, dresses, etc. during a wedding is an

essential part of the ceremony (see Ali, 1991; Islam & Dewan, 1987). In recent years with an increased demand for freshwater fish from Bangladeshis living overseas, the export of fish and fish products has increased significantly.

5.10. Food security and livelihood strategies of Krishnapur fishers

There was time when Bengali people had an abundant fish and rice supply and had fish almost in every meal. Fisheries records show that up to the 1960s, inland water resources could fulfil the national demand for fish but today the situation has changed considerably. Although some 90 percent of the protein needs of rural people still come from fish, its importance is diminishing rapidly with population growth overwhelming the productive potential of Bangladesh fisheries. Since the 1960s, per capita availability of fish has dropped from 12 kg to 7 kg and among lower income groups per capita fish consumption is only 4.4 kg². Fish perhaps plays the most crucial role in diet as a source of minerals and Vitamin-A, Calcium, Iron and Zinc and is particularly important for children and lactating mothers. Bangladesh has the highest level of malnutrition in the Asia-Pacific region, which affects 70 to 80 percent of the children, and infant mortality rates are high (over 1 in 10 up to one year of age).

Although many fishers cannot afford to eat fish, it continues to play an important role in food security³. Fisheries provide people with an income to buy other foods. However, fish is crucial in supplementing the minimum diet of the fishing populations. They are important to the nutrition and supplement the income of the vast majority of the rural people including the poorest of the poor, the landless and the destitute. Small-scale exploitation of a wide range of species provides crucial sources of protein, fats, oils and vitamins, as well as a resource in times of hardship for the people of the study village.

These resources are under threat from numerous environmental pressures ranging from over-fishing to pollution of waterways. The food security of Krishnapur fishers is closely related to fishers' access to their local fisheries resources. Increasing population, pollution and environmental degradation are placing critical pressure on these resources and are threatening the livelihoods and food security of thousands of

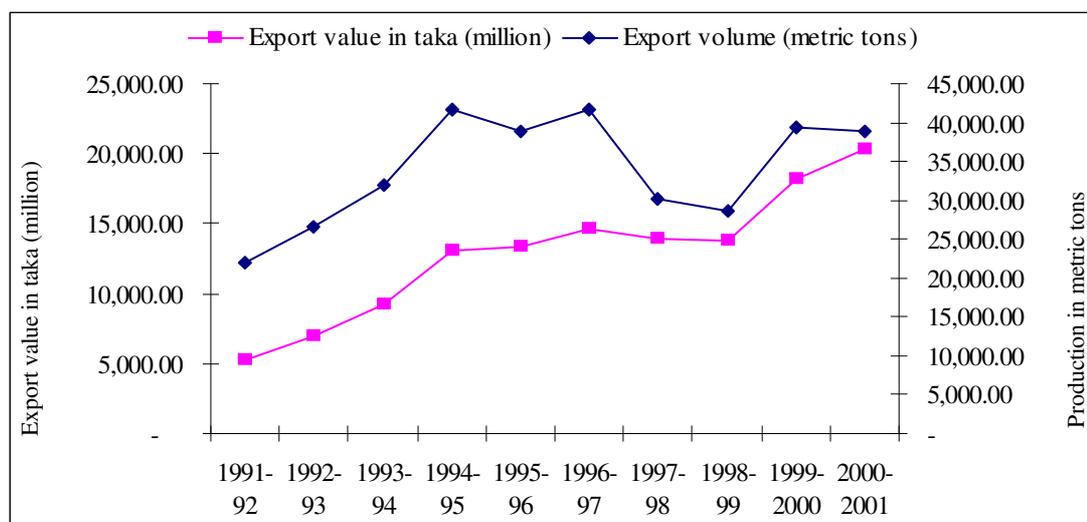
poor and traditional fishing households. Older fishers in the study area claim that fish habitats have been lost and degraded due to man-made and natural causes. According to a DOF report, employment opportunities for some people have increased with the growth of aquaculture (including coastal shrimp) and marine fishing. However, inland open water capture fisheries production and employment are declining. For example, in 1983-84 the total river catch was 207,760 metric tons but only 150,129 metric tons in 2000-2001 (Ali et al., 2003). Such a decrease in fish catch has significant consequences for the sustainable livelihoods of Krishnapur fishers who depend on fishing in the local rivers, estuaries, lakes, and the land depressions.

For the majority of Krishnapur households, fishing is a part of a complex food production system, which underpins a rich and diverse livelihood pattern. Secure access to fishing grounds, including secure including property rights, is essential to the sustainability of that livelihood pattern. However, in the study area, leasing of open water fisheries to a small elite does not ensure fishers obtain an income sufficient to live. A fisher's livelihood is not only related to fish production but also to the inland fisheries ecosystem on which a majority of people depend. A growing demand for fish in local and global markets⁴ has encouraged greater commercialisation of inland fishing, creating conflicts with small-scale fishers in the study area. It has also created an imbalance in resource exploitation between traditional and commercial fishers. A small-scale fishery makes a substantial contribution to the employment, income and food security of the fishing people but a growing influx of people from other sectors, including farming, into fisheries is increasing the levels of poverty and vulnerability of the traditional fishing community and threatening access rights to fisheries resources. Increasing demand combined with a reduction in supply of fish has made water bodies more valuable and increased non-fisher control of water bodies reduced the availability of common pool resources and increased the use of indiscriminate fishing methods.

The globalisation of fisheries is also transforming the structure of local, regional and national markets. During the last decade, the share of export earnings from fish and fish products varied from 6 percent to 13 percent of the total export earnings of Bangladesh. In terms of total quantity of exports of aqua-products, exports have

almost doubled since 1988-89. The average annual growth rate of the fisheries sector in the recent past has been about 6.5 percent, which is likely to increase due to growing local and global demand for fish and fish products (see BBS, 2000; Faisal & Parveen, 2002). In 2000-2001 38,988 metric tons of fish and fish products were exported (mostly shrimp and shrimp products with a small percentage of fresh water fishes) with a value of 20,327.5 million tk. The volume and value of fish and fish products exported and their value between 1991/ and 2001/2 is shown in Fig. 5.14. However, nearly 97 percent of total fish produced in the country continues to be consumed domestically of which inland fisheries contribute 72 percent of total catch and 28 percent comes from marine fisheries.

Since there is a wide gap between supply and demand, all types of fish, irrespective of the price, are marketed easily due to the presence of a heterogeneous mixture of buyers. Export of fresh water fish is a very recent development for Bangladesh.



Source: Ali et al. 2003.

Figure 5.15: Export of fish and fish product from Bangladesh

With increases in the human population and consequently in the demand for fish, fishing pressures are intensifying every year, and the poor fishers are becoming vulnerable and looking for alternative non-fishing survival strategies including rickshaw pulling (local), day labouring, and others.

While the specific impact of increased exports of fin fish on Krishnapur is not a main objective of the study, several local leaseholders either own fish processing plants or have commercial links with fish processors and exporters in the local area. Some, but an unknown, proportion of the total catch of Krishnapur fishers is sold to these processors and exported to the UK, Australia, USA, Canada and the Middle East. One of the biggest fish and shrimp processing and exporting business in Bangladesh, the Kuliarchar Group, has plants close to Krishnapur and in Chittagong and Cox's Bazar. The father of the owner of the Kuliarchar Group formerly held leases in a number of water bodies in the Krishnapur area, including Bengla Lake.

5.11. Life and culture in the village

The lives of local fishers and their families are closely related to rivers and boats, and these have effects on their cultural practices and social relations (figure: 5.16-5.19). The fishers are very conscious of their cultural identity and distinctiveness, have a strong belief in the rightness of their values and maintain strong bonds of kinship in their social and economic life. Fishers consider their kin to be more dependable than others when at work on the river. Hindu fishers believe that God has entrusted them with a sacred duty of fishing to enable them to supply others with fish. Hence, any deviation from their 'jati-pesha' (caste occupation) is thought to be sinful. Fishers speak of flowing rivers having a softening and relaxing effect on their mind and body and have developed various songs and folk stories, sayings and folklores, jokes and riddles. When fishing, fishers gain pleasure from singing folksongs such as 'bhatiyali' and 'shari' songs (gaan), which have vigorous rhythms, and utilize folk dialects and themes taken from their everyday life. Inspired by rivers, boats and water, there is a song called Shari (boat race song), which is sung by the gaoty/ gaity (special sari singer) as an accompaniment to a boat race when oarsmen sing a *Shari* song in chorus. One of the festive seasons of the bhati (low lying) areas of Kishoregonj, Netrokona, Sunamgonj, Habigonj, and Brahmanbaria is during the mid monsoon month of Sraban (July-August), when all the fields are flooded, rivers and canals merge with the depressions and harvesting is long over. The whole area celebrates during this time and the festival goes by different names in different areas.

It is variously referred to as Nouka Puja, Srabani Puja or Bisha Hori Puja. As the names imply, the festival centres on the boat, waterways and other traditions. Everywhere there are hectic activities. Friends visit friends and married daughters make long awaited journeys to their parents' home, the trip referred to as Nayar (Gupta, 2001). Bathing in the Old Brahmaputra River was once a popular activity for the thousands of poor Hindu people of the area who could not afford an expensive Durga Puja. The event is commonly known as 'Asthamir Snan' and is held on Janmasthan, the birthday of Lord Krishna, when people travel to Hoshenpur on the banks of the Old Brahmaputra (river) in Kishoregonj. Others bathe in the Buriganga on the same occasion.



Figure 5.16: Young fisher's living room decorated with cinema posters



Figure 5.17: Young boys relaxing on the net



Figure 5.18: Fishers playing cards during the off season

5.12. Women and children in fishing and agriculture

A traditional pattern of gender role allocation, which is found in many fishing communities, also prevails in the fishing community of Krishnapur with fishing itself an exclusively male domain and women carrying out important ancillary tasks such as weaving nets, salting and drying fish (Ram, 1991; Hornell, 1950; Anderson & Wadel, 1972; Janet Carsten, 1997; Danowskys, 1980; Inge Tvedten & Bjorn Hersoug, 1992). Koibortta women not only manage household activities, they make nets, prepare Gub (one type of glue for dyeing nets), dry fish, repair nets, sort the catch, and do some agricultural activities (paddy and nut plantation, threshing, winnowing and harvesting) (Table: 5.6 & 5.7 and figures: 5.20-5.24). Young girls also prepare nets. They are taught from early childhood by their mothers and grandmothers and in some cases prepare nets for sale. Small nets sell for a minimum of tk.200-300 while larger ones can sell for tk 1000. They take orders from local fishers and also sell to other village people or in the local market through their husbands. Raw materials are purchased in local markets at Bajitpur, Kuliarchar and Bhairab. Women use this money mainly for family purposes. Such net weaving work is done during the monsoon when other work is unavailable. One woman, Gita Rani (35), was paid 15 to 20tk for making one *hat* (18 inches) of net and could make 20 hats a month after performing all her other household activities. Although these activities directly contribute to fish production, their male counterparts hardly recognize them as their contribution to fish production process. Fisherwomen are not encouraged to fish as they are said to lack the physical strength to work big nets in poor weather conditions, are subject to restrictions on mixing in public places and have little time to do much else besides household duties.

Many women, young boys and girls also work as hired agricultural labourers and on family farms. During Kartik-Poush, they plant paddy and earn 70 to 80 tk. per day for working from 8 a.m. to 16.00 –17.00 p.m. (without any meal from the employer). During Magh-Falgun, women mainly plant, winnow and thresh paddy and nuts for which they earn 35-40 tk. per day.

Table 5.6: Daily activities of fisherwomen

5 a.m.-6 a.m.	Wake up, wash, say prayer, clean dishes in the river
6 a.m.-9 a.m.	Carry water from river/ tube well, clean house and kitchen, take goat/ cattle to graze, clean courtyard, stables, milk cows, prepare breakfast
9 a.m.-11 a.m.	Boil paddy, lie out to dry, husk paddy, grind spices, husk rice before cooking, and prepare <i>chata</i> (indigenous fuel) from cow dung.
11 a.m.-16 p.m.	Prepare meal, cook meal, wash clothes in the river, bathe and take lunch, if three meals a day. Make nets, sew kantha
16 p.m.-19 p.m.	Bring cattle back, feed and secure them, cook evening meal (if any), take preparation for evening praying i.e. puja, light the lamp (Harican/ KUPI) with fuel.
19 p.m.-22 p.m.	Feed everyone and then retire

Source: Fieldwork in Krishnapur in 2001-2002

Both Muslim and Hindu women and girls work in the fields or outside the home although very few work as agricultural labourers. The more pious Muslim women and girls prefer to work in their homesteads or a nearby house rather than more distant places. In contrast, Hindu women and girls work as hired and self-employed agricultural labourers. Some wives and daughters of rich fishers, fish-traders and farmers work mainly within their house as self-employed workers in both agricultural and non-agricultural jobs. They are involved in both planting and harvesting paddy and nuts. Widows work for pay in the homes of other women who themselves take care of the major domestic duties. In a few cases, women in poor families take their young daughters with them to work as agricultural labourers. More senior women are paid a little more than younger women but both are paid less than men. Some fisherwomen expressed their concern about this wage gap.

Shachi Rani (45), Uzzala Rani (60), Lakhmi Rani (35) and Rita Rani (13) who worked as hired labourers (called 'muni') in nut and rice planting, winnowing, harvesting, drying and boiling earned 30 to 35 tk per day without meals while male workers were paid 40 to 60 tk with meal. Srabonti Das (55), a widow, worked as a *muni* and faced severe hardship during monsoon when work in the fields was not possible. Rita Rani Das (13) of Companyhati lost her father three years ago and she and her mother worked as hired and self-employed labourers. They were paid 30 tk each (without meal) for working as hired labourers in the nut and paddy fields to supplement their family earnings, to cover family expenses and to repay 40,000 tk in

loans from wholesale commission agents and moneylenders which had been incurred by brothers in the family. Dewalla Rani Das (45) of Companyhati is married with a married daughter and her husband sold dry fish locally but earned some 40 to 50 tk per day. Each monsoon season she borrowed money, which she attempted to repay during the dry season from work as a hired labourer. Like other village women, fisher women do not have enough land to grow vegetables.

Table 5.7: Year round (seasonal) activities of a fisherwoman

Baishakh (15 th April-14 th May)	Thresh, dry, clean, parboil and husk rice, harvest and dry nut
Jaistha (15 may- 14 June)	Dry and stack paddy, stocks for cattle (locally called <i>kherl nara</i>), prepare net and kantha
Ashar (15 June- 14 July)	Make nets and kantha, visits relatives (especially parents or maternal uncles (<i>mamar bari</i>))
Srabon (15 th July-14 Aug)	*Do
Bhadro (15 Aug – 14 Sept)	Prepare food for the fishers who go fishing in the early morning at 3-4 a.m. Weed and make trellis for vegetables, and raising seed.
Ashwin (15 Sept. – 14 Oct.)	Do
Kartik (15 Oct. – 14 Nov.)	Dry and soak seed, sow seedbed, water and take care of seedbed, cultivate vegetables and pulse.
Agrahayan (15 Nov- 14 Oct.)	Grow vegetable (winter) in and around the homesteads
Poush (15 Dec. – 14 Jan.)	Take care of winter vegetable, prepare <i>chata</i> fuel from cow dung, plant paddy and nuts
Magh (15 June – 14 Feb.)	Harvest winter vegetable, harvest potato, winnowing and cleaning of nut and paddy fields
Falgun (15 Feb – 14 march)	Nut & paddy field winnowing, winnowing and cleaning of nut and paddy field
Chaitra (15 March – 14 April)	-Do- Collect fuel (made from cow dung), Harvest paddy and nut.

Source: Fieldwork in Krishnapur in 2001-2002



Figure 5.19: A fisher girl weaving a net: mother helping



Figure 5.20: Fisherwomen weeding the paddy farm



Figure 5.21: Fisher girls drying paddy



Figure 5.22: Fisherwomen working in the chilly garden



Figure 5.23: Both men and women working together drying paddy

5.13. Relations between Hindu and Muslim fishers

Hindus are a minority in Kishoregonj but in Krishnapur, they are in the majority with Muslims living in only one of the seven wards (*hati* or *para*) and working mainly in agriculture. Generally, relations among Hindus and Muslims are amicable and there have been no riots or clashes between them for fifty years. The 1965 riots during the India-Pakistan war did not reach the village. At the time of fieldwork, Muslims were reported to have exploited Hindus, when some days earlier several nets of a Hindu fisher had been stolen by local Muslims. The fisher recognized all of them but could not take legal actions. While overt conflicts between Muslims and Hindus are rare in the village, there are social, psychological, political and economic differences which manifest themselves in, among other things, differences in national and local political allegiances, restrictions on marriage, spatial segregation, and tensions over fishing rights and access to fishing bodies and religious practices.

A majority of Hindus are political supporters of the Awami League (at the time of writing the main opposition party) and have good relations with local Awami leaders. The current local Member of the Parliament who is a member of the ruling Bangladesh Nationalist Party is very popular due to his amiable behaviour. However,

since the election of the BNP coalition government in 2001, Hindus have felt more insecure and have been subject to some political and economic harassment.

Marriage between the Hindu and Muslim girls and boys is usually not allowed and those who breach this informal rule are subject to sanctions. For example, two young Muslim men, who married Hindu women 10 years ago were actually rejected and expelled by their parents and not allowed to live with their respective families. To the present day they reside in separate homes.

As a minority community, Hindus feel some insecurity in engaging in financial transactions with Muslims and do not wish them to know of their true financial status. In reaction, Muslims say Hindus are secretive and do not express their true motives to anyone. Muslims also accuse Hindus of being unpatriotic for leaving their homeland for the Indian state of Tripura. Such charges of lack of patriotism have sometimes resulted in bloodshed and looting of their properties. Many Hindus say they feel like strangers in their homeland and are treated as second-class citizens.

5.14. Conclusion

The chapter has described the main features of the social, economic and demographic organisation of Krishnapur village. It shows that the village consists largely of landless workers, many of them fishers, who own few assets and earn limited and often irregular incomes from a small range of economic activities. There are a small minority of fishers and traders, who own land, fishing gear and other assets, control local fish trading networks and organise group fishing, hiring fish workers from Krishnapur and other villages. It also discussed the role of women and children in fishing and other fishing household activities. Women were shown to play a subordinate but important role in providing ancillary services to fishers, but that rarely if ever did they accompany male fishers on their fishing expeditions. Finally, relations between Hindu fishers and their Muslim neighbours were discussed. While relations were general good, the Hindu fishers of Krishnapur regard themselves as a religious and economic minority in the region and as such were sometimes subject to political pressure which occasionally resulted in violence and looting of properties.

The next chapter takes up this theme and broader debates about fisher's local or indigenous knowledge, beliefs and practices. The chapter focuses on Krishnapur fisher's knowledge and management practices related to their fishing environment, fish ecology, stock enhancement, fish habitat, fish breeding and other fishing activities. It goes on to describe various indigenous fishing practices, resources management techniques, and beliefs and ritual practices related to fishing.

Endnote

1 Data and information on Bajitpur fisheries provided by the Thana Fisheries Officer and Thana Land Officer are not similar. According to Thana Fisheries Officer, there are 8 large fisheries (above 20 aces in Bajitpur, while according to the Thana Land Officer, there are 9 large fisheries. Differences in the size of the Jolmohals are also very significant (Jolmohals) (see annexure: 6.1). Information provided by the TFO about the total number of fishers, fisher's samities, fish production, demand and others are also quite misleading. For example, according to the local fishers, there are about more than 10,000 fishers in Bajitpur but according TFO, it is only 2200. On the other hand, according to AC Land the size of Bengla-Charabadha Jolmohal is 916 acres, while according to the TFO, it is 1363.5 acres. Information collected from the Thana and District Fisheries office do not match with information of Thana Nirbahi Officer, Thand Land Officer and other sources. For this study, many of the estimates or data provided by the Thana Fisheries officer was crossed check with the information gathered from the field and were found either overestimated or underestimated. While talking, the Thana Fisheries Officer expressed his resource limitations in collecting actual data from the field. He mentioned that they are always asked to provide some information on fish production, consumption, resources, market, fishers and other issues related to fishing without giving them all the necessary technical and financial supports. To him, this situation leads them to produce fabricated information and data.

2 The FAP-16 environmental study (Minkin et al.,1993) states that rural people in every area consumed large number of species, most of which were small sized fish belonging to the category of miscellaneous.

3 The food security is defined as " secure access to enough food at all times " (Maxwell & Frankenberger, 1992). The FAO World Food Summit held in Rome in 1996 defined food security as existing "...when all people at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life. Food security by this definition relates to security at the individual level. . Amartya Sen has elaborated how an individual can achieve the entitlements needed to attain the accessibility and affordability to food security. Sen enumerates four entitlements to give an individual the direct and indirect means to achieve food security: i) production-based entitlement—producing food for themselves, ii) trade –based-entitlements—selling or bartering goods or other assets, iii) labour-based entitlements—selling the labour power, and iv) transfer-based entitlements—receiving gifts or transfer of food (Sen,1981).

4 Global production from capture fisheries and aquaculture and the food fish supply is currently the highest on record and remains very significant for global food security, providing more than 15 percent of total animal protein supplies (See annexure: 6.1:Tables 1 and 2). Fish provide roughly 40 per cent of the protein consumed by nearly two-thirds of the world population. For example, over a billion people throughout Asia depend on fish and seafood as their major source of animal protein. But, fish have moved into luxury-style, high-priced food class. The United Nations educational, Scientific and Cultural Organization (UNESCO) warns that fish, long regarded as the "poor man's protein" is diminishing globally as a result of increasing market demand and over fishing. The developed nations are winning in the consumption stakes (<http://archive.greenpeace.org/~comms/fish/part9.html>, 13/05/2003). Unlike capture fisheries, aquaculture production has continued to increase markedly. Excluding China, world aquaculture production (other than aquatic plants) exhibited a

somewhat lower average annual growth rate (5.3 percent) in the 1990s than it did in the 1980s (7.1 percent). It is believed that aquaculture potential still exists in many areas and for many species. For example, the frequent lack of basic data on subsistence and small-scale fisheries, such as those in many inland waters, contributes to failures in management and policy-making directed at preventing overexploitation, stock decline and exacerbations to rural food insecurity and poverty.

CHAPTER SIX

Indigenous fishing knowledge of Krishnapur fishers: the social and ritual organisation of fishing activities



Figure 6.1: Fishers repairing their nets

6.1.Overview

This chapter discusses Krishnapur fishers' knowledge of the fish they catch, the techniques they use, the ways in which they organise their fishing activities, market their catch and obtain credit. It also includes a discussion of their beliefs and rituals and wider understandings they have of their relations with the natural and supernatural worlds which give shape and meaning to their fishing practices.

6.2.Indigenous Fishing Knowledge of Krishnapur fishers

The Krishnapur fishers possess a wide range of nets, hooks, boats and other fishing equipment which has accumulated over the generations and, in some instances, is quite recent in origin. These fishers have depended largely on locally available raw materials and technology to make and repair their nets and boats and also assess the cost effectiveness of using different technologies. Fishing gear is adapted to varying social and environmental conditions. For example, some all-purpose nets are used the

year round, while others are used more selectively for relatively short periods, mainly during the floods to catch particular target species. Smaller mesh gill nets (puti jal, koi jal) are used during the early season (June-August) to catch younger fish after which they use large mesh gill nets (pata jal, fash jal) to catch larger fish, mainly during September to December (Figure 6.2 & 6.3).



Figure 6.2: Fisher using cast net (jhaki jal) for small catch



Figure 6.3: A Krishnapur fisher fishing by lift net (beshal jal)

Krishnapur fishers have their own fishing calendar. Fishing times vary between seasons in different types of fishing spots and are related to the weather. Fishers mainly fish at night, when fish are said to prefer to come to the surface where they can be caught more easily using shorter nets. A full moon is also believed to bring fish to the surface. The fish gather close to the surface when there is no disturbance from boats and other sources. Moreover, small fish feed at night close to the surface. Fish like to play in the early morning and in the evening from 4 p.m. to 7 p.m. when the water /fishing area becomes very calm and quiet but in the afternoon they remain submerged and relatively stationary.

Some fishers believe they get more baila fish after the eleventh day of the lunar fortnight (purnima). They also say it is easier to catch certain species of fish such as Bacha, Gaura, Aluni and Chapila during the night when the fish usually swim close to the water surface. Fishers believe that the weather on the last day of Chaitra, locally called 'Har Bishu Din', influences the quality of fish or snake eggs, with good weather causing an increase and bad weather a decrease in quality. Fishers also realize that larger fish follow the smaller ones, which swim in the river when the water level is high. The fishers then throw a cast net (jhaki jal) into the water. During the late rainy season, when the water has a strong current and becomes muddy, Dimwala Chingri (Shrimp with egg) is easier to catch.

Local fishers also have detailed knowledge about fish habitat and fishing environment. They know the environment in which different species of fish live and what type of gear can be used to catch particular species. According to them, almost all fish species breed from March to May and large fish spawn in deep water, close to the riverbanks, where the current is weak. Small fish are said to breed mainly in floodplains close to rivers and in the shallow water of lakes and riverbanks. The fishers say that because of the strong water flow in the river, the sand on the bottom shifts, creating deep depressions, which are an ideal environment for fish. Local fishers can identify these depressions by their 'logui' (a bamboo pole used for propelling a boat).

Fishers claim that different fish are characterised by different smells. When fish move scent produced by the skin passes into the water and by smelling the water, fishers can guess what types of fish there are. Fishers are also able to estimate how much fish will be found in a certain lake and land depression and what types of fish can be found in a particular year.

The movement of a particular fish discloses its identity to a traditional fisher. Fishers try to follow the movement of large cat fish (Pangas) near the Kashbon from the boat. Big Pangas are known to search for food near the riverside water reeds (Kashbon), locally called Khailla (species of tall grass with tuft of soft and white flower). Bubbles, which slowly rise to the water surface, reveal the presence of Pangas.

Carps (rui) shake the water with their tails, Black Carp (Baus) shake the bamboo pole with their tails, the Ghagat catfish make certain sounds with their tails and Chital shake the water with their tails at regular intervals. Big fish such as Rui, Katla, and Boal shake water vigorously and disperse it and small fish sometimes make similar sounds. Aluni, Bacha, Chital fish may come to the surface for short intervals, while Bamosh swim close to the surface for long periods. Fishers also believe that fish fry move in their thousands towards the high tide. Some fish species can swim long distances but prefer to stay in a particular spot while others prefer to swim close to the water surface.

Over time, Krishnapur fishers have developed an understanding of the inter-relationships between the lunar cycle, river currents and migratory behaviour of fish, and also of the dynamics of the bottom topography of the river, including the pattern of sedimentation and soil quality. In Bengla Lake, at the beginning of the fishing season, the fishers find out where the fish are and, in the case of large fish, follow them to discover their hiding places in caves (locally called Khari). Fishers describe how koi, a type of catfish, during thunderstorms in the rainy season swim from ponds to the flooded area or to another marsh, sometimes crossing land, where fishers can easily catch them with Koi nets, Polo traps, spears and sometimes by hand.

The local fishers also know what fish feed upon and that species differ in their feeding habits. In general, fish eat cockles (abalone) the skin of the hizal bush, fungi, algae, plankton in mud, water hyacinth and shells. Some big fish eat small fish and

both eat tiny animals and plants found in mud, encrusted poles and other water plants. Fishers also say that nowadays some people use artificial feed as fish bait, including a mustard seed mixture (khoil), sodium chloride (chuna), fertilizer, muri (popped rice), rice, shells, worms (kecho) and small prawn.

Fishers have very clear knowledge of the productivity of different fishing spots and know which area produces what species of fish. In Bengla Lake the most common fish are Chapila, Air, Kalibous, Gainna, Swarputi, Behushi Kata, Guchi kata, Rui (medium), Mrigal and Silver Carp/Grass Carp. In Digheepar Bosti water body, Rui (7-10 kg), Bacha-Ghaura, Icha/Chingri, Air, Kalibaus, Ilish, Keski, Baim are available while in Joanshafer Depression fishers mostly fish for Baila, Chirka, Chanda and other small species (see appendix 6.1) .

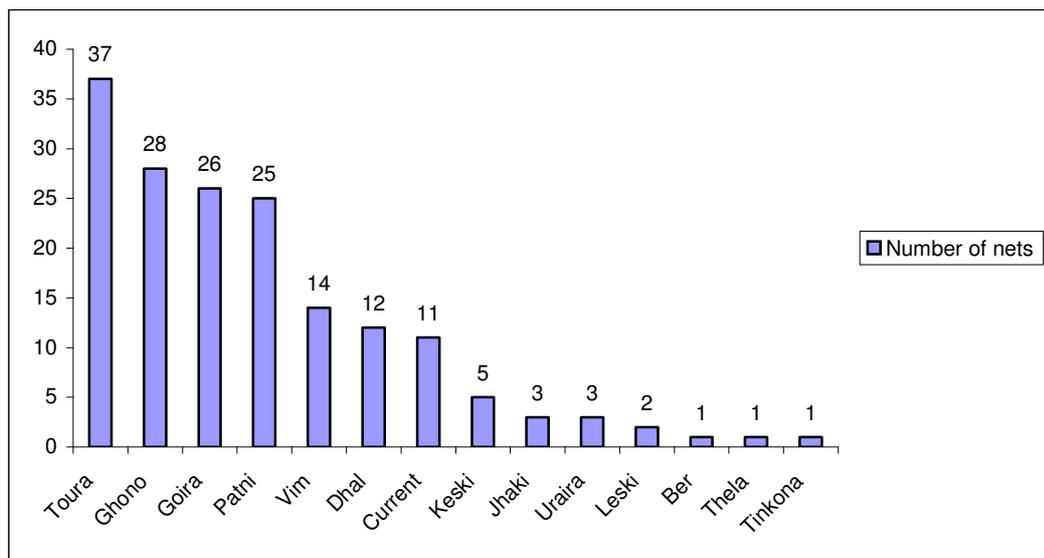
Fishers also have detailed knowledge of whether a particular species is abundant during a particular season or is found throughout the year. Hilsha fish, an ocean fish species which migrates to local rivers when the breeding season is close, are caught during the rainy season (May to August). During the monsoon season when it drizzles, Hilsha are caught in large quantities but when the heavy rains begin the water becomes muddy and Hilsha are rarely caught. Young shrimp, locally known as Icha, are also caught at this time, especially in turbid water.

Older fishers regard summer (March-May) as the fish-breeding season when all the fish spawn and shelter in reservoirs in the northern areas of the Ghorauttra River. In the rainy season, all the water bodies become submerged and the rapid water flow from flooding prevents fishers from fishing. Fishers consider that fish are easier to catch when the monsoon waters start receding. During this draw-down period, instead of fishing by nets, some forty percent of Krishnapur fishers lay out hooks to catch Bailla, Baim, Kailla, Boal and similar fish. Current jal (a plastic net made with thin thread and small mesh) is popular. If the water is not clear, the current jal is laid out because the net threads are fine which makes catching fish easy. Other fishers use a triangular net (kona jal) to catch Leski and shrimp (chingri maach). Another circular-shaped net called Gora or Goira jal is set up at night as its threads are coarse and fish cannot see it.

Keski, Aair and Boal fish are caught between rising and falling tides when the water becomes calm with no current. Shrimp swim on the surface at night and are fished using Vim jal and Goirajal. Fishers use cast nets (Uther or Jap Jal) to catch Chital, Aair, Rui, Boal, Mrigal and Kailla in winter when currents are less strong. A fisherman reported that a Chital weighing 22 kilogram was caught in the year 2002 using Ber jal. A large net with small and thick mesh (Gana jal or Ghurti jal) is used for catching small species such as Chapila, Puti, Kaikka, Chela and Chanda.

Generally speaking, Krishnapur fishers' choice and intensity of use of gear depends on the population of target fish available in the local water bodies (figure 6.4). The intensity of gear use varies with the abundance of fish, which, in turn, is determined by the presence or absence of water currents, aquatic weeds and the topography of the locality. For instance, the intensity of use of Veshal Jal is always greater inside canals or in their vicinity. Ber jal is used in large numbers in relatively clear water. Bamboo traps are used in the canals, paddy fields and across land depressions. Cast nets are used mainly in clear waters of canals (see Ahmed, et al., 2004).

Fishers' knowledge has not remained static. Over the past 40 years they have begun to use imported thread and machine made nets of small mesh size which are cheaper to buy than hand made ones and are more readily available. They also use fishing gear for non-fishing purposes such as boat engines to pump water in paddy fields, grind spices and supply electricity. The introduction of imported engines on locally made wooden country boats has allowed fishers to fish in more distant locations and to supply regional fish trading centres (arots) more quickly. Such trade has gone hand in hand with an expansion of commercial links with the major and regional urban centres.



Source: Fieldwork in Krishnapur in 2001-2002

Figure 6.4: Types of net used by Krishnapur fishers

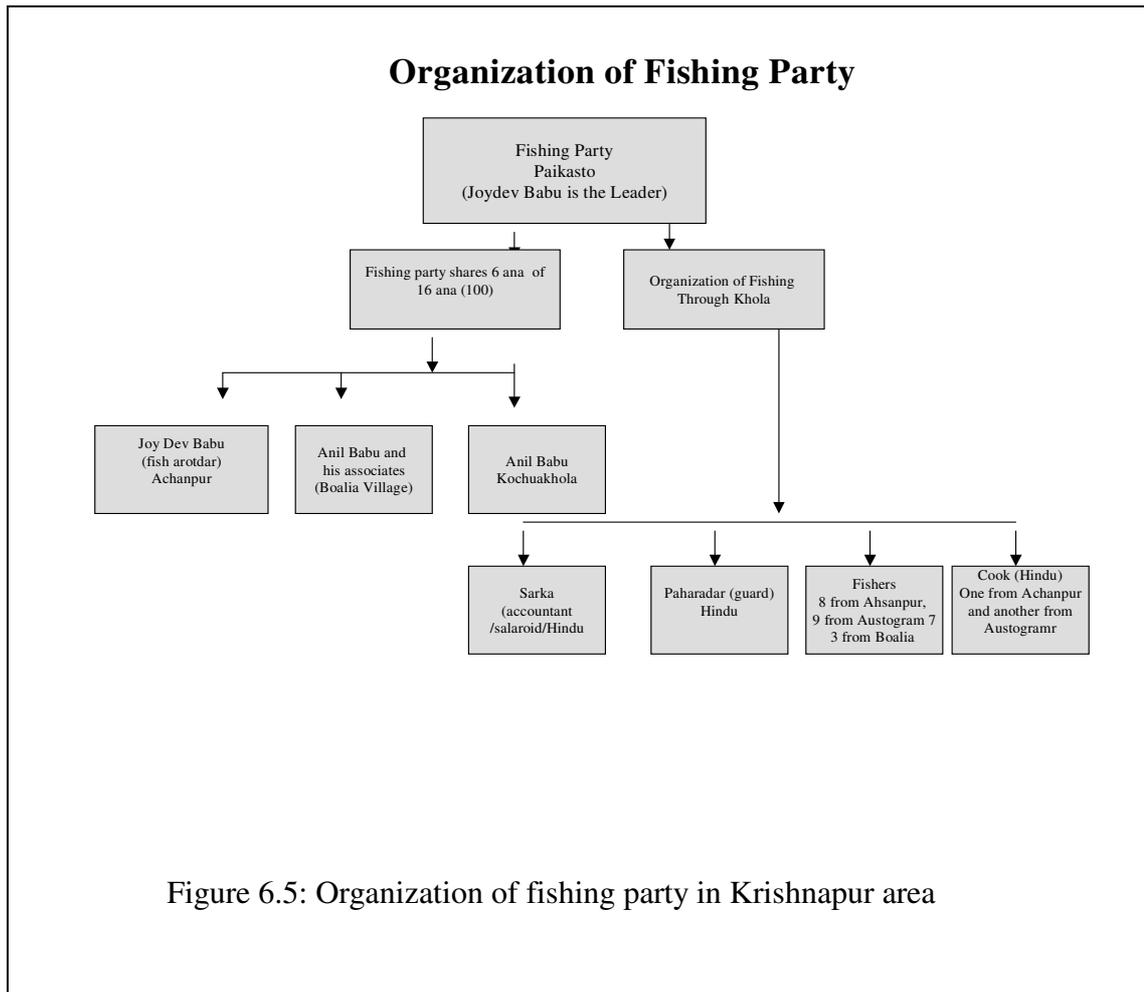
6.3. The organisation of fishing activities

Fishing activities are organised in a variety of ways using different gear in different fishing environments and can be divided into three broad types: collective or large party fishing, small group fishing and individual fishing. Collective or large party fishing such as 'ber' and 'jag' fishing (see below) is the most profitable fishing activity in which a group of fishers, preferably from the same village or ward, who are closely related to each other, forms a fishing party and organizes fishing activities on different waterbodies on the rivers, land depressions and lakes. Fishers are usually hired seasonally from Krishnapur village and, if necessary, from other local and distant villages by water body leaseholders on a 'chukti' (literally 'contract') basis. Both Hindus and Muslims work together as members of a fishing party or as leaseholders/ owners (figure: 6.5-6.7). However, most prefer to work with people from their own religion.

In Krishnapur, it is usually the wealthy fishers who own nets and boats individually or collectively and who run these fishing parties. For example, Rajeshwar Das (70) is one of the fishing party leaders of Krishnapur and has been fishing for 45 years. He

has 4 sons and 4 daughters. Two sons' fish with him, one is studying at Jagannath College in Dhaka and the fourth is too young to fish. All his daughters are married. Rajeshwar has accumulated his savings over many years and now has four boats and some nets. Each boat has one fishing team with a team leader over which Rajeshwar has general control. However, he considers his income from fishing insufficient and derives income from other sources such as his wife and his sister-in-law who rear fowl and ducks. For the last six months (during 2002), Rajeshwar made a profit of 20, 000 tk. From a fish catch worth 500, 000 tk. He earned 18, 000 tk. from his boats and another 30, 000 tk. from his nets as rent. To organize the fishing activities, he spent 432, 000 tk. on payments for the fishing team leaders and crew members and on food and security. However, fishing party leaders are not always fishers and include ex-fishers, fish traders, wholesale commission agents and non-fisher leaseholders.

In addition to fishing locally in Bengla Lake and other water bodies, Krishnapur has about fifteen fishing parties with some fifty to 100 members, which travel to other regional sub-districts where they work for other leaseholders and stay there for the whole season (October-February). To organise such fishing parties, fishing team leaders require a lot of money to rent or buy boats, nets and other assets, to hire labourers, and cover the costs of food and other living expenses. Such fishing expeditions are often unprofitable, because of problems of access to productive fishing spots and the decline in fish resources. These fishing party leaders prefer to recruit fishers from their own families and extended kin and fish outside the local area. For example, one fishing party of Krishnapur, consisting of 3 team leaders and 10 general fishers, organises fishing in northern Bangladesh every year and recruits fishers from the village.



More generally, the most important types of large party fishing in Krishnapur are large seine fishing, large aggregation fishing and screen barrage fishing. They are described in more detail below.

6.3.1. Large party fishing using large seine nets (Ber fishing)

‘Ber fishing’ is one of the most common types of large party fishing mainly organised by leaseholders employing 20 or more fishers in demarcated sections of various water bodies such as lakes and rivers. Every year, a particular group of fishers under the leadership of a senior or ex-fisher (known as fishing party) is invited by the leaseholder to organize fishing activities in Bengla Lake, one of the important waterbodies of the study area which is famous for pile fishing (see below for a detailed description of pile fishing). Bengla Lake is part of the Bengla-

Charabadha fishery, an area of over 1, 000 hectares and one of the major fishing areas for about 10, 000 fishers in the Digheerpar union and adjacent villages. The lake was created naturally along with the river and one part of it has converged with the river and looks like a large ditch. November to March is the peak season for fishing in the lake.

The fishing party and the leaseholder have formal and informal agreements regarding the distribution of the catch, the cost of food to feed the fish, security and other expenses. During the first period of fishing, from November to January (Agrahawan to Chaitra), a group of fishers consisting of 10 to12 members fish using the encircling technique with a large seine net. Different sections of the lake are surrounded by nets, placing bamboo poles within the area (Kata) and slowly enclosing the encircled area until the fish are unable to escape.



Figure 6.6: Fishers showing researcher a seine net



Figure 6.7: Fishing party organizing *ber* fishing in Bengla Lake

The fishing party organizes four or five catches in each of the bers or circles one after another using a smaller dhal Jal (circular net) inside the circle. Each catch within the ber takes about one month and gives a first catch-value of 200-300, 000 tk, which decreases from the first to the last. Besides large-scale ber fishing, fishers also do regular fishing in the big ber or outside the ber using jhap or other types of small net. In Bengla Lake, fishing by an organized party starts in Kartik (October).

Fishing on large lakes and land depressions upstream from Krishnapur involve the organisation of fishing expeditions, where one or more fishing parties are required to organize the total fishing activities. The fishing party often draws on people known to each other from the same village, different villages or the region. The different tasks and duties (fishing, cooking, organisers, security guards, and accountants) are allocated to different people. Both Hindu and Muslim fishers in the fishing parties work together using a place on the bank of the river or lake, known as a 'khola' from where they organise their fishing. The khola has its own fish-drying yard surrounded by a bamboo fence and protected from birds by old fishing nets. Outside the enclosed

area of the khola there is a tea stall and small shop. Fish traders visit the khola using small trawlers to buy fish.

The fishing party organizes nets, boats and employs fishers and fishing party members have different investment shares which take the form of nets, boats and cash. Some fishing party members have financial connections with non-fishers such as commission agents and moneylenders who act as financiers. On Bengla Lake, the catch is divided between the main fishing party, which receives 6 shares out of 16 (choy ana) and the leaseholders (malik pokkho), who receives 10 shares (das ana) out of 16. The catch distribution between the leaseholders and the fishing party depends on the costs involved which can include placing branches of Hizol tree and muli baash (a kind of bamboo used for making brush piles in the deeper parts of the lake and river), salaries of guards (paharadars) fishers, sarkar /manager, cooks and others, construction of living places on the khola, setting of tube wells, kitchen and toilet, costs of making/ renting fishing nets and boats (figures: 6.8 & 6.9).



Figure 6.8: Two fishing party leaders on the *khola*



Figure 6.9: A Koibortta fishing party leader from Krishnapur

During the fishing season, 30 to 40 people live on the khola and are recognisable by their function (figure: 6.10-6.12). The main fishing party recruits a number of fishermen (20/25) and several women, usually widows, who prepare meals for the khola residents, dry fish and manage the kitchen. Fishers earn a salary between 5,000 to 10,000 tk and women receive 2,000 to 4,000 tk for five months. Managers keep accounts of daily fish catches, fish selling prices, food expenses, salaries, advances etc for which they are paid between 2,000 and 3,000 tk a month. . They enjoy higher status than fishers in terms of salary and sleeping arrangements (manager sleep on a bed while fishers sleep on the floor). Managers are employed who are considered honest and experienced in accountancy.

Fishers are divided into different categories in terms of the nature of work performed and their work capabilities and skills. The fishers who can fish in the deepest parts of the water are considered the most skilful, receive a higher salary and are referred to as ek nombor boral (number one divers) or boro boral (senior divers). Below them are middle level divers (moddham boral) and lower level divers (choto boral).

Number one divers set the nets on the river or lake bottom. The head fisher (sardar muni) organises the crew and takes the main decisions. He is identified by a cloth called gamcha wrapped around his head and he receives 11,000 to 12,000 tk. per season. All head fishers have a great deal of fishing experience and have risen through the ranks, being promoted to head fisher from chotta bora, moddham boral and boro boral.



Figure 6.10: Drying fish on the *Khola*



Figure 6.11: The *Khola*: temporary administration for lake fishing



Figure 6.12: Leaseholder's boat for guarding against illegal fishing

6.3.2. Jag Fishing

Another type of large party fishing is that done through the use of large aggregation devices and is carried out by both Hindus and Muslims. Locally, it is called Jag katha where sections of the Ghorauttra River close to the bank are surrounded by large bamboo poles or tree branches and tree branches or thick twigs are then thrown into the surrounding area (see figures: 6.13 & 6.14). After two months during the daytime in winter fishers set their nets and enclose the area and the fish are caught. In Brahmanbaria, this fishing practice is known as Katha. Jag/Katha is an important fish aggregation device consisting of brush piles used in Jag fishing. The size of such jag or katha is between 0.1 and over 1 hectare. Fish congregate around the bushes where they feed on various algae. Fishers say that the Jag/Katha acts as a mini sanctuary for small and large fish before they grow to a mature size and as breeding ground for local species. Most Kathas are prepared with cheap and easily available materials bought from local farmers.

Katha materials are of two types: materials for shed and for sheltering fish. Fish also congregate under floating aquatic vegetation. Long bamboo poles and nylon rope are used to encircle and anchor such vegetation.



Figure 6.13: Jag/Kata fishing in the Ghorauttra River



Figure 6.14: Kata piled for preparing jag

6.3.3. Patty Bandh Fishing

Patty bandh (screen barrage fishing) is a type of large party fishing, done mostly by Muslims, where a bamboo-made fence is placed along a stretch of water. Traditionally it had one inlet called a valve but has been modified and the number of valves have increased, the effect of which has been to increase the catch per unit of effort. The fence is usually placed in small canals/sanctuaries with flowing water and with valves towards the water flow. In large water bodies such as lakes, depressions and large rivers, a series of fences are placed close to the embankment. Such fishing is considered by both fishers and the fishing authorities as very destructive. It is usually leaseholders who organise such fishing. Concern over the use of fences is of long-standing and in the Fisheries Act of 1950, it was prohibited in open water fisheries.

The leaseholders of Bengla-Charabadha, Digheerpaar Bosti and the Nagnarkhal water bodies organize such fishing and sometimes sub-lease certain sections of their fishery to local specialized fishing. Screen barrage fishing is also done by mosque and temple committees as a means of raising money for religious activities. These committees have begun to interfere with fishers' access to certain areas of the large

land depressions in the area. Some Muslim fishers from Kurkarai, Dilalpur, Patuli and Kailag villages in the area have also begun to specialize in screen barrage fishing, which has further restricted the access of Krishnapur Koibortta and other fishers to what are ostensibly open access waters.

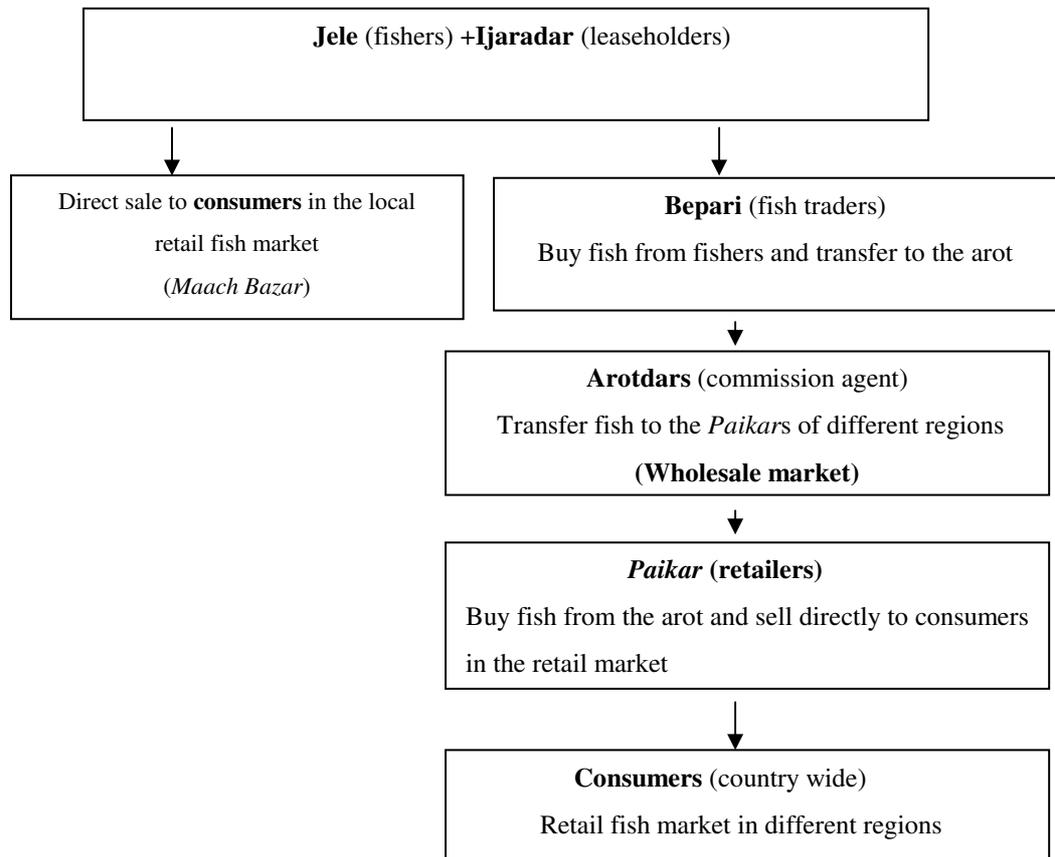
6.3.4. Other forms of fishing

There are several small groups and individual forms of fishing done by both Koibortta and Muslim fishers and include using traps, hooks and baskets. There is some degree of specialisation in such fishing by village and even ward. For example, Muslim fishers of Lalkharchar para of Krishnapur specialize in shrimp (chingri) fishing using traps and hooks throughout the year. The Hindu Koibortta fishers of Kaimerbauli village fish with hooks and catch Kuicha (snake like fish). The fishers of Shafanto, Choudanto and Halalpur villages have expertise as ber fishers on lakes. Trap fishers are generally the poorest members of Muslim communities, and the majority have neither boats nor nets. In Krishnapur there are 14 full-time hook fishers (4.3 percent of total households) living in Railahati, Kushahati, Tekkahati and Lalkharchar wards. Fishers who fish with hooks or traps, generally own up to a couple of hundred hooks or traps. Traps cost about 30 tk. each and hooks cost only two to three tk. About seventy seven percent of hook fishers take advance money from the local fish traders and commission agents during the monsoon and supply their catch to them. Fish caught by net are sold to a variety of buyers, including but not exclusively, fish traders. Advance ranges from tk. 1, 000 to 5, 000 tk.

6.4. Fish marketing

Trading and marketing of fish are dominated by leaseholders, small local fish traders, fish wholesale commission agents, local fish retailers and fishers (see figure 6.15 & 6.16).

Figure 6.15: Fish production & consumption chain: from fishery to market



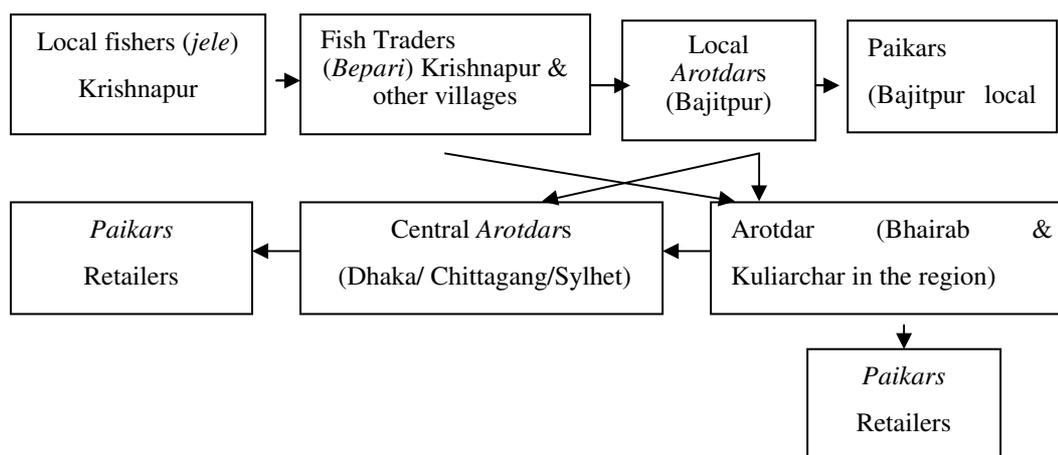


Figure 6.16: Fish trading and marketing network

Krishnapur fishers sell their catches primarily to local traders who sell it on to different local and regional fish trading centres in Bajitpur, Kuliarchar and Bhairab or sell direct in local markets. A few fishers directly retail their catch on the local markets. The small traders of Krishnapur mostly supply fish to the fish trading centres of Bhairab and Kuliarchar. Some ex-fishers in Krishnapur and other neighbouring villages run some fish trading agencies in these two big regional trading centres. Of these, Bajitpur Matsya Arot and Sheba Matsya Arot are very prominent. There are 14 fish traders in the village who supply fish to the Bhairab and Kuliarchar fish trading centres.

In Krishnapur, 39 (12.91%) of the 302 household heads are directly involved in fish trading. Of these, 16 trade in fish only, 13 both fish and trade fish and 10 trade in fish and farm. Another 17 are primarily involved in fishing but also do some fish trading. An example of a small-scale fish trader in Krishnapur is that of Bireshwar, a Hindu works three Muslim traders from Shahpur village who have been trading together for five years. They supply fish to two wholesale commission agents in the Bhairab fish trading centre from whom they receive advance money. Fish are bought on rivers, lakes and land depressions using one engine boat (Charanga) owned by Bireshwar. Bireshwar gets 50 tk. a day rent for the boat from the collective fund (locally called ezmali). The fuel cost is also paid from the collective (ezmali) fund. The group has connections with 40 to 50 fishers in the area and Bireshwar and his partners collect fish daily from Lalkharchar in Krishnapur and on the river in the northern part of the

village. A study of several days' trading activities during the high season in 2002 revealed that they earned 984 tk. on a single day. The previous day they had bought over 83 kg of fish from several Krishnapur fishers for 6, 187 tk., which they sold for 8,023 tk. After paying out for ice, transport to the Bhairab *arot*, boat rent, fuel, meals and wholesale commission charges, they were left with a net profit of 984 tk., which was divided equally among them. During the high season, Bireshwar can buy up to 50 thousand taka of fish a day. Bireshwar owns a *hilsha* net and a 0.2 hectare of land he cultivates himself. Bireshwar buys fish from other smaller traders who buy direct from fishers on the river using small dingi boats. These smaller traders also sell direct to the local retail markets. For example, one such Hindu trader of Krishnapur, Nitanda, earns about 80 to 150 tk. per day during the high season. He neither takes nor gives advance money but rather buys regularly from eight fishers, most of who are his relatives or lineage members and who deal only with him. Nitanda sometime borrows from Bireshwar who buys on his behalf, earning 5 to 10 tk. profit for each kg of fish.

Krishnapur also has several small fish wholesale commission agents who run their businesses from the main local and regional fish trading centres. For example, Dilip Kumar works in partnership with another Hindu resident of Krishnapur and distributes advances to about 50 fishers in Krishnapur and other local villages who bring their catches to him. He charges 5 tk. as commission for transferring each 100 tk of fish from a seller to a buyer. He also sells fish to other fish traders and retailers who again sell fish to the local market (see figures: 6.17-6.23).



Figure 6.17: Small fish traders buying fish on the river



Figure 6.18: A local fish trader buying fish from the fishers on Gorauttra River

The three main wholesale fish trading centres are Bajitpur, Bhairab and Kuliarchar. Bajitpur centre, which is about two kilometres from Krishnapur, has 10 commission agents. It was established in 1998/9 to take advantage of increased urban and regional

demand for fish. Previously, fishers came to the site and sold fish directly to retailers who transferred fish to the capital city, Dhaka, and other big markets. Today every commission agent has one chamber (godhi) in a room (ghar) and one sarkar/accountant (locally known as tohori) who maintains the daily accounts. Commission agents pay a 10 tk tax daily. October to December is the peak season water bodies begin to dry up and fishers catch more. Generally a commission agent in Bajitpur handles 70 to 80,000 tk of fish per day compared with 50 to 60, 000 tk during the lean season. On average, each commission agent invests between 40 and 50,000 taka as advances to local fishers.

Bhairab is the biggest regional fish trading centre and one of the most important river ports of Bangladesh. It is a regional fish-trading centre for the fishers of Krishnapur, Mymensing, Kishorgong, Sunamgonj, Sylhet, Brahmanbaria, Comilla and Narshingdi. The fish market, which is situated on the bank of the River Meghna next to the Ferry Landing Place (ghat) has an old and a new section with about 100 commission agents. Trading begins at five in the evening and ends at midnight, the busiest time being between six and ten pm. Besides record-keeping accountants and cashiers, there are auctioneers (becha), weighers (nikti or kairal) and child labourers (mintis) who carry the fish baskets to and from quayside. Depending on the fish supply, a weigher can earn 300-400 tk. a day, a labourer .50-100 tk a day and accountants and cashiers 60-100 tk. per day. Commission agents receive 3 tk. for selling a 100 tk of fish and 2 tk. as khoraki or daily meal money from fish traders for selling one kilogram of the traders' fish.



Figure 6.19: Local fish retailers with fish in the boat



Figure 6.20: Small fisher selling fish to the small fish trader



Figure 6.21: Fish trading in local fish trading centre



Figure 6.22: Small fisher with the daily catch in the fish trading centre



Figure 6.23: A fisher going to the fish trading centre with his catch

Fish retailers come to Bhairab from all over Bangladesh and both wholesale traders and retailers are connected with specific wholesale commission agents and buy fish on credit on a short-term basis, repaying within one or two days.

During the high season, one crore tk. (10 million) of fish is distributed daily to different parts of Bangladesh from Bhairab. The large-scale wholesale commission agents transfer between two to three lakh tk. (2 to 300,000) of fish daily and some have an investment of one crore tk. in their business. The majority of fish have connections with one or more agents and take advances. Some agents buy fish direct from leaseholders as advances, sometimes paying lease money to ensure a large and regular supply. Some also lease water bodies in their own name or in the name of a fishers association.

6.5. Social networks and the advance system

Since most Krishnapur fishers struggle to earn a living, they often rely on formal and informal sources of credit such as banks, NGOs, commission agents and moneylenders. Generally, fishers take loans during October to December and repay between April and June. Borrowing money from Krishnapur village moneylenders is

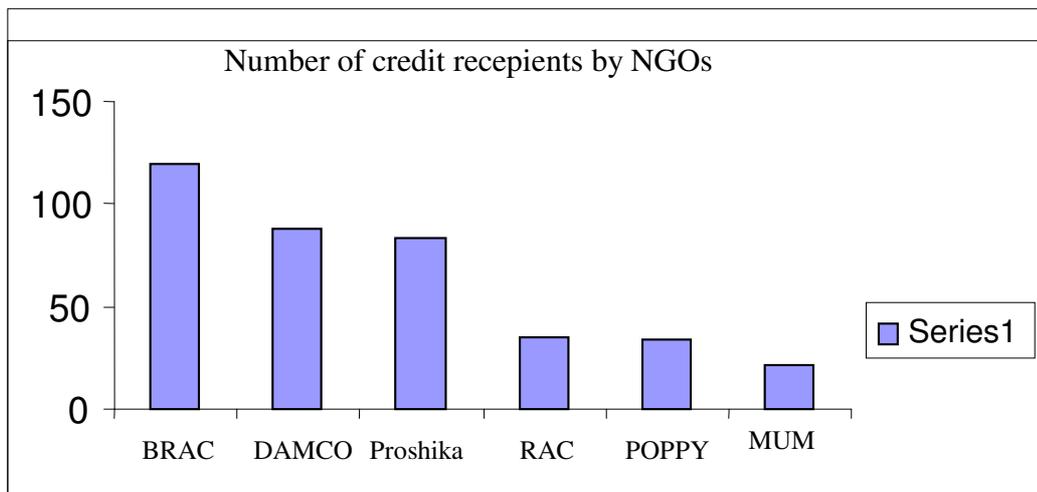
preferred to borrowing from moneylenders of other villages as village moneylenders charge low, even zero, rates of interest, in contrast to other moneylenders where rates can be eight to ten times higher than government bank rates and four to five times higher than those of non-government micro-credit providers. However, an unexpected illness, demands for the immediate payment of dowry, boat and net repairs may compel poor fishers to accept high interest rates. Jewellery and property may even be pawned or sold.

Advancing money is one of the most common forms of financing in fish trade, accounting for more than 75 percent of financing in the study area and enables fish traders and commission agents to procure the required quantity of fish. Fishers who receive advance money do not usually pay any interest but agree to sell a fixed quantity of fish at a price lower than the market price. Thus, they trade off free access to the market for long-term credit, which helps them survive during the lean season.

Krishnapur fishers have access to six different types of money lending sources. These are the six village societies with capital from 20,000 to 300,000 tk, 10-15 moneylenders who provide loan in exchange for rice / paddy and they include rice traders, big cargo boat owners, shopkeepers, rich farmers and other business people, fish traders, fisherwomen's societies, NGOs and commercial banks. The most common source of loans for the local fishers is the fish traders and wholesale commission agents (see table: 6.1 & figure 6.23 & 6.24).

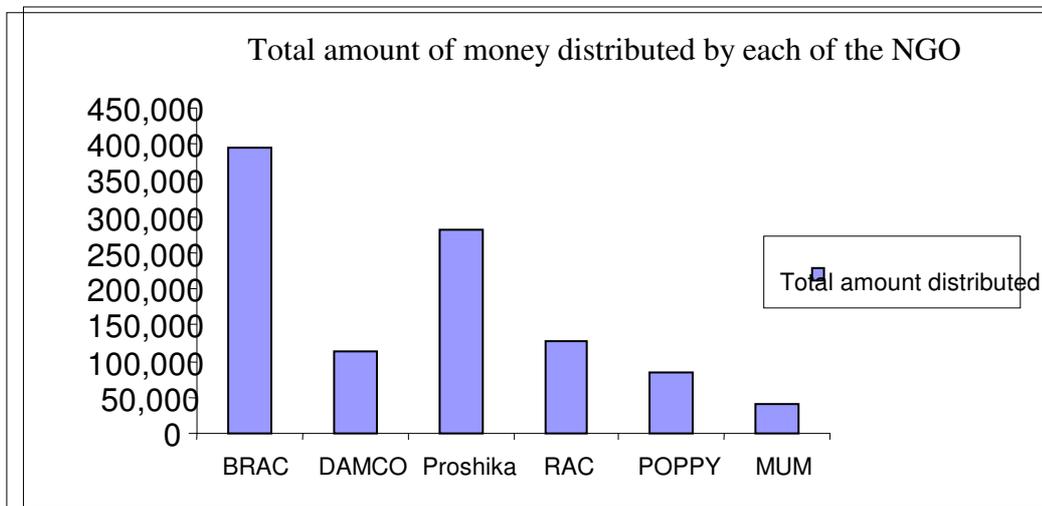
Table 6.1: Distribution of households by source and amount of borrowing money

Amount borrowed	Sources of loan								Total
	No loan	Friend/relatives	Bepari	Arotdar	Samity	NGO	Shud Babshayee	Bank	
None	9	-	-	-	-	-	-	-	9
0-1000	-	4	7	-	5	3	4	1	24
1000-5000	-	2	14	4	8	5	6	2	41
5000-10,000	-	-	3	9	2	-	3	2	19
10,000-15,000	-	-	2	4	-	-	-	1	7
Total	9	6	26	19	15	8	13	6	100



Source: Fieldwork in Krishnapur in 2001-200

Figure 6.24: NGOs and their activities in Krishnapur



Source: Fieldwork in Krishnapur in 2001-2002

Figure 6.25: Amount of money distributed by NGOs

Krishnapur women receive loans, but it is usually their husbands who use the funds for running small businesses and repaying debts. There are a few fisherwomen in the village who run small-scale businesses such as grocery shops in their neighbourhood,

rear domestic fowl, trade cosmetics and make nets using NGOs money. Many male fishers complain that they are not getting any financial support from these NGOs to buy, repair or invest in nets or boats at low interest rates. They criticise the high interest rates charged which can be 100-200% higher than those of other local informal money lending bodies and government organizations. On the other hand, NGO staffs complain that fishers do not repay on time or use loans for other purposes.

6.6. Fisher's knowledge related to fish diseases

The fishers of Krishnapur have their own understanding of fish diseases, particularly the epizootic ulcerative syndrome. Many think that the use of current nets (monofilament nets) is related to epizootic ulcerative syndrome disease, which fishers refer to as *khata roog* or spot on the skin. They say that a type of chemical used to make current nets causes fish ulcers, although there is no scientific evidence to support this view. Some fishers argue that this disease is of recent origin, having been reported for the first time in Chandpur in February 1988, spreading to districts in the southern and north eastern parts of Bangladesh. The disease affected the naturally occurring fish species in closed waters such as Taki, Shol (snake heads), Baim (Eel), Koi, Kholisha, Meni (Perchus), Puntis (Barshs), Bele (Gobies), local major carps (Rui, Catla, Mrigel etc.) and their juveniles (Farooque, 1997). Fishers also believe that careless disposal of plastic bags in drains, canals and rivers results in fish diseases. The fishers say that plastic bags cover the river bottom, scratching the bodies of fish and threatening their food sources in alluvial deposits. . Some fishers also believe that extensive application of pesticides and chemical fertiliser causes fish diseases, which affect Soal, Gazer, Baim, Puti, Boal, and Tengra etc. The residues of these toxic materials are said to mix with water and attack fish.

6.7. Fisher's knowledge about the use of fish as food and medicine

The fishing people of Krishnapur consider that fish possess various medicinal and other properties. For example, various species of carp and catfish such as Sing, Fala/Fali, Kali Baus and Nandin are said to increase the supply of mother's milk. According to some fisher women, the head of a Rui carp fish is very beneficial for

the development of children, while Mola, Dhela and Ukil Ladu work effectively to improve their eyesight. They also believe that some cat fish species such as Sing and Magur can cure women with anaemia (sutika) as they contain much iron and therefore help to increase haemoglobin (rockto /blood) in the body. Many fishers say that big fish bones contain phosphorous which help to strengthen the bone and teeth of young children. However, few children in Krishnapur eat fish bones as their parents are unable to afford large fish from the market and usually sell any large fish they catch.

Krishnapur fishers also eat fish to cure a number of other diseases and ailments. For example, boal is good for relieving stomach pain, turtle meat and oil from porpoise (shishu/hoo, now an endangered species) cure trauma (baat) and anemia. Fala/ Fali cures fever and increases bodily strength, while Kuchia is a good medicine against diarrhoea or dysentery. Bengra provides relief from a dental disease locally called daat kotkoti beram (teeth gnashing disease). Mrigal (carp) fish is very good for curing anemia and fainting Mrigi diseases (mrigi). Fishers also use the bone of Mrigal fish for epilepsy.

Fishers and others consult rural kabiraj (mental physicians/ healers) who use fish and fish products for healing physical and mental diseases. The kabiraj use amulets made from various fish parts (fish bones, fish oils, and fish bloods and fish substances) or rely on exorcism as part of the therapy.

6.8. Fisher's religious beliefs and rituals related to fishing

Krishnapur fishers do not draw a hard and fast distinction between the material and immaterial worlds and are convinced that many of their religious beliefs and rituals support their fishing actions in numerous ways. Many rituals deal with unexplained misfortune (for example, small catches or natural calamities such as storms and floods) in their fishing expeditions. Similar to the fishers of Tokugawa Japan (see Kalland, 1995), the fishers of Krishnapur have beliefs related to 'fortune and misfortune' governed by supernatural powers (God or other divinities). Like the fishers of the Trobriand Islands (see Malinowski, 1918), they believe that some

religious rites and practices help to control dangers and uncertainties in stormy rivers or land depressions.

Krishnapur fishers's rituals and ceremonies are observed daily, weekly, monthly or yearly and, although not directly related to fishing, they provide the broader spiritual context within which fishing activities are carried out. They also perform various types of devotional songs and dances at regular or occasional religious ceremonies such as nam kirton, manot or mansa and puja (figure 6.25). Fishers receive spiritual guidance through a number of spiritual teachers and their disciples in the village.

Many fishers believe fishing is a gamble, its outcome depending to a great extent on the will of nature and the willingness of fish to be caught. Fishers believe in the male and female ghosts called 'bhut', and 'petni'. 'Azars' are both Muslim and Hindu spirits that live in the water and are said to manifest themselves as fish. Some old fishers believe that big fish become azar and other fish move behind them. They say that sometimes fishers who attempt to catch fish by putting nets in the water cannot pull them up because of attacks by azars under the water. There is a story of fishers who were unable to pull their nets up and went to a priest/ spiritual teacher for help. The priest started a special worship (puja) with different types of chants (mantra) and advised the fishers to perform some rituals with 'dhup' (smoke). After performing these rituals, the fishers were able to pull the nets up. Many old fishers speak of fishers who fished with a big net such as the Dhal jal in deep water and found something strange and mysterious on the water bed. They informed the leaseholders of the water body who organized special worship by Brahmans or spiritual teachers. In some cases, sheep or goat are sacrificed during the worship.

Krishnapur fishers also use fish and fish products/substances as amulets (tabiz) for both physical and mental healing purposes. One local fisher said that if somebody wants to do harm to another person, he could ask the village person who prepares the amulet. He then attaches it to two 'Sing maach' (cat fish) by a thread and releases them into the water. If the two fishes go in two different directions, the amulet is working and means that the person for whom the amulet is prepared will be adversely affected. This magic is usually performed to cause trouble or create bad relations

between husband and wife or between two friends or two families. However, other fishers doubt that this type of magic works.

The fishers of Krishnapur perform various rites and rituals and maintain certain religious practices not only to get a good catch but also to reduce the risks of life involved in fishing (figure: 6.27). Two examples are given below.

6.8.1. Ganga Worship

The wealthy fishers of Krishnapur arrange Ganga worship to ensure a large catch. Ganga is a sacred river for all Hindu religious in India and Bangladesh and plays an important role in fishers' fishing activities. For example, when fishers do not get enough fish or cannot catch fish, they believe they have offended Mother Ganges (Ma Ganga or Ganga Devi). To make Ganga Devi happy, they arrange Ganges workship (Ganga Puja). Every year fishing parties on Bengla Lake arrange Ganges worship on the banks of the Lake. Such worship costs 5 to 15, 000 tk. The worship is usually held during winter and to satisfy the Ganga Devi the fishers sacrifice a sheep or goat. A statue of Ganga Devi (thakurer murti) and a place of worship (Mondop) are constructed and a large fish is presented to Ganga Devi. All villagers participate in this festival and during the fieldwork in 2001 two separate Ganga Pujas were organised by Gowri Lal, one of the leaseholders of a section of Gorauttra River, and Joydev Babu, a leader of the fishing party of Bengla Lake.



Figure 6.26: *Puja Mondop* (worship place) in the village

6.8.2. Shani (Saturday) worship

‘Shani’ means ‘bad time’ or ‘bad situation’ and also Saturday. Worship is usually performed on a Saturday. Fishers attribute an unsatisfactory fishing trip either to bad luck or to the impact of Shani (the symbol of bad luck). In order to ward off evil, male fishers read the Shanir Pachali (a book) every Saturday evening near the basil plant or on a boat. They use candles, incense and aromatic vapour and prepare Prashad (a special food offering to an idol). About 20 to 25 men perform the worship on a boat beside the riverbank. People on the bank accompany the worship with ‘Uludhani’ (Hindu women ululating). The person who leads the worship keeps some incense and sweets on the galui or prow of the boat. Before offering food to the boat, people who want to worship have a shower and after the worship the food is distributed among the people on the bank. Wealthy fishers also sacrifice sheep during the worship.

6.8.3. Bipad Nashi (danger remove) worship

Fisher wives and mothers perform this special worship for the safe return of a fisher who is in danger. A ‘Prashad’ is prepared from rice, sugar, banana, cucumber and

batasa (a kind of sweet). During the worship, somebody recites verses from a holy book called *Bipadnashi Thakurer Pachali*. Women who want to perform the worship have to fast until the worship is over and the reciter of the holy verses has to fast for one or two hours before the worship.

The fisher women of Krishnapur practice several rituals. They beg gods to bless their fisher husbands and normally worship two times a day. In October, they worship Ganga in a very festive manner. Fisher women also worship the sun for their husband's better life and health and worship one kind of tree called Chandi tree, which their goddess Chandi planted to ensure better health, a peaceful life and economic improvement. The fisherwomen perform two kinds of worship for fishing to Ganga and Kali to ask for the safety and security of their husbands, fathers and sons while they are away fishing and for a good catch.

6.9. Conclusion

The chapter has described various aspects of fisher's knowledge which shape the ways in which they fish and make up core features of their identity as fishers. It was argued that the IK of fishers includes actual fishing practices and the organisation of fishing production, fishing times and seasons, fish habitats and environment, fish nutrition and the use of fish as medicines as well as a range of beliefs, rituals and practices. It also discussed the ways in which fishers market their catches and depend upon various types of advances and loans to ensure their survival from year to year. Fishers regard all of these as defining elements of their fishing life and their place in society as Koibortta.

The next chapter examines the ways in which Krishnapur fishers seek to obtain and maintain what they consider to be equitable access to fishing resources. In these efforts they draw on long-standing local social networks which include specific kin and community-based networks and institutions of lineage, ward, village and multi-village informal committees. The chapter shows that their use of these institutions and networks has had limited success largely because as a fishing minority their efforts have been constrained by more powerful networks and institutions operating at the local, regional and national levels.

CHAPTER SEVEN

Social networks and the management of common property resources among Krishnapur fishers



Figure 7.1: Fishers showing researcher a seine net (*ber jal*)

7.1.Overview

Krishnapur fishers are a small part of a Hindu fishing community which is a religious, economic and demographic minority within the region and in Bangladesh. In this respect they constitute a marginalised group within a broader marginalised category of both Muslim and Hindu fishers.

The chapter gives a brief history from 1950 to 2001 of the struggles Krishnapur and other local Hindu fishers have had with leaseholders, politicians, government officials and others over control of private water bodies in the study area. This section shows that during this time, the fishers had limited direct access to water bodies and were forced to enter into sub-leasing and other arrangements with non-fisher leaseholders and their financial and political backers.

It goes on to describes the three main water bodies central to the present-day struggles and livelihoods of Krishnapur and other local fishers and the main social

networks at lineage, ward, village and multi-village levels, which fishers use to mobilise other fishers and negotiate with leaseholders and their political and commercial backers. The multi-village level committees are of particular importance as they organise fishers from different social and economic backgrounds and locations to deal with issues such as fishing access, catch distribution, outsider political and economic pressures and other matters (figure: 7.1-7.3). A detailed examination is given of the role played by this multi-village committee in helping fishers to establish an informal community management regime nested within the wider formal leasing structure. Finally, the chapter assesses the strengths and limitations of these collective efforts to accord greater significance to their own ideas and practices on how best to manage fish resources.



Figure 7.2: Fishers drying nets on the riverbank (village (somaj) property)

It is argued these efforts are powerfully influenced by wider political, trading and communal interests such as political parties, money-lenders and farmers, which through such means as cooptation of some of their leaders, political threats which sometimes take a communal form, and a broader financial and political control of the leaseholding system. The pressures from these interests, combined with other internal divisions within Krishnapur and across villages, have made it very difficult for Krishnapur and other local fishers to gain direct and long-term control over large water bodies.



Figure 7.3: The village café: the people's meeting place

7.2.Changes in control of private waters in Krishnapur area: 1950-2003

As in other parts of Bangladesh, Krishnapur fishers have experienced many changes over the past two hundred years in the types of property rights regimes they have lived under. During British times, local water bodies were under the control of local talukdars/ zamindars (landlords) to which fishers paid nominal tolls of two thirds of a taka per day for the right to fish in specified water bodies. For example, one such taluk or landed estate, which included Krishnapur, was controlled by Talukdar Taher

Mia who owned a half of the land and water bodies, Hani Mia who owned an eighth and the remainder was owned by other influential individuals. These landowners were able to tax fishers for the right to fish locally. During that time, the major fisheries on the estate were the Bengla-Charabadha, Ghorauttra River and the Kowa and Kadangi Rivers, both of which were sections of the Meghna which flowed into the Bay of Bengal.

In 1950 the Pakistan Government abolished the zamindari system and introduced during the 1950s an open auction leasing system for water bodies. However, Hindu landlords and other wealthy Hindus continued to control many water bodies until 1965 when the India-Pakistan war broke out and led to a flight of many local Hindu people, including fishers, to India. Before 1965 Hindus were a much larger proportion of the local population and played a more important role in the political system (see chapter 4 for more details). Also, the Hindu population was dominated by the Koibortta caste.

In the early 1950s, Mahananda Das was the first Koibortta bidder from Krishnapur. Das, who was a wealthy fisher, had conflicts with local fishers as he did not want to share the fisheries with them. During the 1950s a court case was also filed against him by local fishers regarding illegal occupation of water bodies. Monoranjan Dhar who was the first Awami League MP (Member of the Parliament) in the area assisted the fishers who finally obtained half of the waterbodies. During the late 1950s, the fishers organised a multi-village committee which controlled almost 50 percent of local fisheries, the remaining half being controlled by Babu Mia. Babu Mia faced opposition to his control from local fishers, many of whom refused to pay local tolls.

After Babu Mia, the fishers of the multi-village committee managed to occupy one half of the waterbody by force while Mahananda Das occupied the rest with the help of the military. Following that, Jogesh Chandra Barman, who was a fishers' leader and who belonged to Mymensingh District Cooperative Society, occupied several water bodies and later Lalmohon Sutradhar, who represented other local fisher groups, bought the lease from the government. He shared the lease with Fazlul Haq Khan, the nephew of Monayem Khan (a Muslim League leader, Governor of the then

East Pakistan and a highly communal politician). A section (one sixteenth) of Fazlul Haq Khan's lease was owned by Monsoon Chowdhury who sold his section to the multi-village committee. Fazlul Haq Khan refused to hand over possession and a violent clash, between the two groups, which included the military, followed during which two fishers were injured. Fazlul Haq Khan managed to retain control and in the aftermath of the incident many Hindu fishers migrated to India.

Formal leasing by the government of the Bengla-Charabadha fishery began in 1960/61. It was leased under an oral agreement to one of the traditional Hindu fishers' cooperative societies. At the time, the cooperative society received taxes/tolls from fishers fishing in the Bengla Lake while the adjacent part of the river was open to all.

According to Krishnapur informants, a local fishers' association called Kaimerbauli Fisher's Association controlled by a multi-village committee leased Bengla-Charabadha fishery from 1972 to 1981. From 1982-1991, it was leased out to the Kaimerbauli multi-village committee and from 1992-1994 to Golap (a contractor from Kuliarchar) in the name of the Noahata Fisher's Association. Fishers from the villages of Goradhora, Gupinathpur, Ainargup, and Burichara supported Golap's leasing.

From 1995 to 1997, another local fishers group, the Kaimerbauli Hazarkee (made up of fishers from Kaimebauli, Boali, and Shibpur villages close to Krishnapur), under the leadership of Ananda Babu leased the fishery for 3 years for 10.8 lakh tk. per year. During their leasing period, they defaulted on payment and were issued a number notices by the Government to pay their outstanding debt. When they failed to do so, the government decided to lease the waterbody to individuals rather than to a cooperative society. Murshed Alam, a contractor from the Bajitpur area, under the banner of Shibpur Fisher's Association, got the lease for 3 years (1998-2000) for taka 7.56 lakh tk. per year.

After 1997, Bengla-Charabadha fishery was divided into a number of sections and re-topsiled (new demarcation of the sections). For the last 3 years (2000-2003), the fishery has been leased to the Digeerpaar Charabadha Fisher's Cooperative Society

under the leadership of a wealthy Hindu fisher for fourteen lakh tk. per year. He is backed by a local Muslim Awami League leader and local MP in the ruling Bangladesh Nationalist Party.

According to local fishers, fishers' interests were given greater consideration in the 1980s when Lt. General Ershad (the then President and Military ruler of Bangladesh from 1982-1990) declared all waterbodies as open, giving free access to fishers. Ershad is said to have visited Krishnapur pronouncing that fishing activities could be carried out without the payment of rents or tolls. However, from 1991, after the return of the country to civilian democratic rule, conditions deteriorated when the secretary of the Nayahata Fisher's Cooperative Society, backed financially by an important local businessman with leasing and fish processing interests, held the lease. In 1992 there was a bloody clash between the leaseholders and the local fishers, which resulted in the death of a fisherman. The Cooperative Society lost the lease for the next tenure period (1994-1996) and it went to the Kaimerbauli-Boali-Shibpur Fisher's Cooperative Society after 1996. The new Society, which was more representative of local fishers and backed by a local left-leaning political group, demanded punishment for the murderers of and the General Secretary of the Society, opened an inquiry into the case. Local and outside fishers continued to fish freely until 1996 when the case was settled without anyone being punished and the lease was bought by the Society.

In 1995, following a number of fishers' movements in different parts of Bangladesh, the Ministry of Land abolished the leasing system on flowing and open water bodies and that fishers would have free access to them.

Following this decision, fisher from the area, including Krishnapur requested the District Commissioner and the Secretary of the Land Ministry to release a large area of the Ghorauttra River from the Bengla-Charabadha Fishery, which continued to be leased out illegally despite it being an open and flowing water body. In 1997 the local Jolmohol Committee decided to release about 1600 acres in the Ghorauttra River. The District Commissioner refused and later divided the Bengla-Charabadha Fishery into three waterbodies and leased them out.

From 1997 to 1999, a local contractor of Shahapur village near Krishnapur purchased the lease of one section called Bengla-Charabadha in the name of the Shibpur Bowalia Fisher's Cooperative Society for 7.56 lakh taka. The second section, Digheerpar Basti Fishery, was leased by a Krishnapur fisher on behalf of the Krishnapur Cooperative Society for 4.55 lakh tk. (see appendix 7.1) and the third section, Nagnarkhal Fishery was taken by another association for 3.86 lakh tk. Many local fishers said that under a previous leaseholder, fishers received one quarter, a third or in some cases, a half of the profit and had open access to the river section of the Bengla-Charabadha Fishery. This ended with the purchase of the lease by the Noahata Fisher's Cooperative Society, which was controlled by Hindu fishers but backed financially by the contractor/fish processor mentioned earlier. The Society again sub-leased sections of the lease to other fisher groups, which effectively stopped fishing without payment of tolls on the river. This resulted in economic hardship among many poorer fishers.

The poorer fishers of Krishnapur and other villages continued to press the administration for the return of fishing rights and demanded that the State Minister of Land declare 1586.93 acres of water bodies as open fisheries. They argued that some 30,000 fishers were economically dependent on fishing in this waterbody and that it was an open water body forming an active part of the perennially free flowing river Ghorauttra, which extended from the Garo Hills in the North to the Meghna in the South. In 2001, the Deputy Collector of Revenue recommended that a part of the waterbody, consisting of 586 out of 1363 acres be declared open with the remaining 777.38 acres to be kept as closed water bodies.

However, between 1999 and 2001, the District Commissioner again leased out these open water sections of the river for another 3 years without reporting to the Ministry of Land in time. In 2001, fisher leaders again requested the State Minister of Land to declare the 586.22 acres an open fishery (see appendix: 7.2) and demanded a stop to leasing. In 2000, on behalf of the fishers of several villages of Digheerpar Union, which included Krishnapur village, the Secretary of Digheerpar Charabadha Fisher's Cooperative Society Ltd applied to the State Minister for Land to hand over the waterbody to them so they could establish a community based fisheries management

system. They estimated that the fishery would give a gross profit return of 30 million tk. from a total fish production of 100 million tk. (see appendix: 7.2). However, the government refused without providing any grounds.

This brief historical account of changes in leasing arrangements on water bodies in the Krishnapur illustrates the role played by fishers' associations in the struggle for fishers' rights and the . Government policy was that the first two bids were to be restricted to fishers' cooperatives but if there were a third bid, any individual could do so. Most fishers were not financially and politically powerful enough to bid at these auctions and in most cases the poorer fishers were the financial and political clients of local leaseholders, fish traders, moneylenders and other local political and economic elites. Under such circumstances it was easy for the more powerful to establish fake cooperatives to bid for water bodies using genuine fishers as a cover. In fact, the Assistant District Commissioner often colluded with these interest groups in return for financial and other rewards.

In the study area, of 15 local fishers' association or cooperatives, not a single one was independently run by genuine fishers¹ but were under the control of industrialists, fish exporters, fish traders and fish wholesale commission agent, present or ex-minister/ parliament members, political leaders, fishing party leaders, and construction contractors (see appendix: 7.3 & 7.4). Many of these de facto leaseholders were Muslim who preferred to employ Muslim fishers, which placed additional pressure on local Hindu fishers in Krishnapur and other villages. In addition to fake cooperatives, another way in which local fishers were deprived of direct control of local water bodies was through the sub-leasing system. According to section 8 of the District Commissioner circular on Sayrat Mohol Leasing², leasing is strictly prohibited (see appendix 7.5). The circular states:

Leaseholder, in any situation, cannot sublease the jolmohol or any part of the jolmohol.



Figure 7.4: Fishers drying nets on the banks of Bengla Lake

7.3. Major fishing water bodies of Krishnapur fishers

The three main water bodies which are central to the lives of Krishnapur fishers are the Ghorauttra River, Joanshaher Depression and Bengla Lake, all of which are connected to each other during the monsoon season. Sections of the river are officially under open access but are, in fact, controlled by private leaseholders. Bengla Lake is privately controlled the year round while the Joanshaher Depression is officially common property and open to all but sections are controlled by private non-fisher interests

On the Ghorauttra River, Krishnapur fishers fish mainly in 3 sections, Bengla-Charabadha, Digheerpaar Bosti and Nagnarkhal, which are leased out as three different waterbodies. They are both closed and open and leased to individuals or fishers' associations, most of which are financed by non-fishers or do not exist at all except on paper. Such financing is done because Government gives priority to fishers' associations over individuals in bidding at auctions for water body leases. There has been a long dispute over Bengla-Charabadha and Nangarkhali (see field report of A.C Land (10/6.1997, Circular no: 258, and appendix. 7.6), which were open to all fishers for a nominal toll to local landlords. But during the last 10 to 15

years, Charabadha, an open section of Bengla Charabadha Fishery has been sub-leased illegally to the local political leaders, businessmen, contractors and other local influentials who charge higher tolls and employ security guards to confront and sometimes attack fishers who cannot pay the toll.



Figure 7.5: Fishers waiting to depart for a fishing expedition on Ghorauttra River

Bengla Lake forms part of the Bengla-Charabadha fishery which, at 1,000 hectares, is one of the major fishing areas for about 10,000 fishers in Krishnapur and other local villages. November to March is the peak season for fishing in the Lake, which is famous for its pile fishing which involves creating small brush and branch sanctuaries for fish to congregate. On the banks of the Lake, temporary buildings and fences (khola) are constructed by the leaseholder for administrative purposes and to house members of the fishing parties.



Figure 7.6: Fishing party organizing fishing on Bengal Lake



Figure 7.7: Drying fish on the *Khola*



Figure 7.8: The *Khola*: temporary administration for lake fishing

Under the formal leasing system Krishnapur and other local fishers cannot fish individually but can only work through a fishing party. The fishing party, which receives 40 percent of the total catch, is usually composed of local and well-off/ senior fishers, fish traders or ex-fishers (who are shareholders in a small fishery), other fishers or non-fishers with small investments and fishing labourers.

The fishers are paid either with cash or catch share on the Bengla and Ghorauttra fisheries. Catch share is preferred by leaseholders for large-scale fishing as catching methods takes large quantities of fish and the leaseholders fear that their profit share will be lower if they accept pre-catch negotiated rents only. Fishing is dominated by Hindu fishers and only a few specialised Muslim fishers are allowed by the leaseholders to fish during the monsoon using traps as fish catches are low using this type of gear.

On the Joanshafer Depression, which is several thousand hectares in size and is considered an open fishery, fishers usually fish at night during the monsoon period. In dry season (October to March) the depression is used for growing paddy and other crops. Some richer Krishnapur fishers control land in the depression and farm and keep cattle during winter, employing poor fishers as contact (*chukti*) labourers who live in a temporary house built on the depression. Small sections of the depression close to villages located both on and to the side of the water body are controlled informally by groups of fishers and others. Also, some larger leaseholders extend illegally their river and lake leases into the depression to widen their catch area.



Figure 7.9: Fishers grazing cattle on the land depression during the winter



Figure 7.10: Krishnapur fisher drying straw on the land depression

7.4. Krishnapur fishers and their social networks

There are several local Hindu social networks which operate at ward, village and inter-village levels which play an important role in a range of social, economic and

political activities, including fishing. The three most important are the lineage (Gwati gushti), ward/village (Doshok) and a cluster of villages (Hajarkee).

The lineage is made up of anywhere between ten to twenty kin-related fishing families who can trace their descent patrilineally who live in the same ward or in different wards within Krishnapur. Lineages perform several functions, including fishing, and several have long histories. For example, according to Gouri Lal, a forty five year old leaseholder and senior member of the Rajram lineage, his lineage is three to four hundred years old. Gouri Lal is a key leader among Hindu fishers in Krishnapur and in the region. He began as a fisher, inheriting his occupation from his father, grandfather and great grandfather who were all involved in fish trading and fishing, leased local rivers and lakes and organized fishing parties. Other important lineages in Krishnapur include Sikdar Lineage, Dayaram Lineage, Nibu Miar Lineage and Jainal Miar Lineage, all of which are named after their ancestors.

Generally, well-off fishers with nets and boats prefer to organize fishing activities with members of the same lineage or rent out boats and nets to other lineage members and sometimes invite other lineage members to work with them as hired labourers or co-workers. Normally, a lineage contains members related by blood and marriage ties but a fishing family and individuals in a few instances can change their lineage membership and a new family from another lineage may join them. The most reasons for changing lineage membership is conflict among families within the lineage over asset sharing, land and personal disputes. A family may have business relations with members of another lineage and seek to join the lineage to improve their economic prospects.

To become a member of another lineage, a member of one lineage asks members of another lineage if he and his family can become members. Prospective members must entertain with tea, biscuits, sweets, lunch/ dinner or whatever they can afford. All members of the enlarged lineage are considered brothers, maintain close social contacts and pledge help when necessary.

In Krishnapur, 15 such lineages were identified in seven wards. Lineage members must inform each other about all important events and occasions such as marrying off

a daughter, burying a deceased member, organising a religious ceremony and so on. Lineages are economically and politically stratified and the most powerful lineage in Krishnapur is the Das Gwati (see appendix: 7.7).

A number of lineages in each of the wards make up what is called a ward committee (doshok: lit. ten persons). It also operates at village level when several wards come together. The ward committee is an informal grouping run by a number of fisher leaders from different lineages of the ward. This ward committee primarily works as a body for resolving social problems within the ward. It also operates at village level when all ward committees in the village come together. The ward committee's role is to settle disputes within the ward and to make decisions on fishing activities such as organising large fishing parties, disputes with leaseholders and political harassment. The ward committee meets at the house/bari of an aggrieved person or group who initiates the meeting. A number of ward committee leaders, including the senior persons of the ward, selected family heads and leaders of other wards (educated and older members of elected bodies and other informal institutions) are invited. People gather in the courtyard of the house and the issue is discussed with one of the ward committee leaders presiding over the meeting. The ward committee leaders are the most respected people in the village and are selected for their knowledge, seniority and leadership qualities. The ward committee leaders may ask person found guilty of an offence to pay a penalty and apologise.

Like the lineage, the ward committee leaders differ in their social and economic backgrounds. Using key informants, 53 ward committee leaders were identified of which eighteen were wealthy fishers who own big nets and boats, twelve were wealthy farmers, six were leaseholders/shareholders of waterbodies, twelve were bepari/local fish traders and three were regional fish traders/ commission agents, one was a teacher and one a Union Council member.

Some ward and lineage leaders also work as village leaders. For example, in Krishnapur there are 23 senior and wealthy men who are village leaders drawn from the ward committees. These leaders are fishers, leaseholders, fish wholesale commission agents, farmers, fish traders, teachers and elected members of the Union

Council. A ward committee also exists in the Muslim ward and is led by fish traders and farmers. Poor fishers or farmers usually do not lead the ward or village committee.

Generally, it is the prominent leaders who have good speaking skills and who lead the ward or village committee at higher organisational levels such as the multi-ward committee (*hazarkee*) (see below). Usually two to four persons from each village are members of the multi-village committees.

Some of the the leaders of the ward from each of the villages, including Krishnapur, also represent their respective villages within what is called the *hazarkee* or multi-village committee. The multi-village committee is an old Hindu fishers' institution through which fishers protect and promote their fishing and other interests. Kawai in his study of 19th century zamindari rights (1987) has argued that the multi-village committee has existed for at least 150 years in various parts of Bangladesh. For example, he states:

...the fisherman who worked in the river Meghna used to pay rent to the collectors of Dacca and Tippera, but since the *jalkar* [fishing lease] was awarded to the zamindars by a *Rubikari* (written proceedings) of 1860 the fishermen became refractory/disobedient. Some paid rents, while others continued to fish without payment of rent. Some who did not pay were sued and decrees were obtained against them. However, they formed a strong combination (committee called *hajarkee/hazarkee*; a committee of thousand) and fought up to the High Court (Kawai, 1987: 153).

Roy (1940) also reported the existence of a multi-village fishers' movement in the Meghna area during the 1930s. During that time the fishermen along the river Meghna formed a movement committee and established a fund from subscriptions. In the 1930s whenever any fisherman was in trouble they fought up to the High Court and legal costs were paid out of the fund.

Today, the multi-village fishers' committee is an informal grouping which can include thousands of members, usually fishers who live in a number of neighbouring villages. The fishers of each village elect a multi-village fishers committee leader to

represent them. The committee leaders invite all the fishers of the cluster villages to meetings where fishing and fisheries issues are discussed.

In the study area, the multi-village fisher's committees are very active and several meetings have been held in recent years to organize local fishers to collect funds to pay for the lease or sub-lease of Bengla Lake, the Gorauttra River and other waterbodies. Most of the multi-village committee meetings were held in Krishnapur and brought together the representatives of the neighbouring villages of Boalia, Kaimarbauli, Digheerpar, Kachuakhala, Noagaon, Goradhora, Gopinathpur, Dilalpur, Burichara, Shibpur, Ainargup and Shahpur. These villages share a common interest through their location close to the main fishing grounds and because of their dependence on those fishing grounds for their livelihood. These associational ties are strengthened by cross-village marriages, other kin-based relations and religious links. This multi-village committee works as a regional apex body in the wider locality and in each ward and village has representatives on it.

In Krishnapur, if disputes and conflicts cannot be settled at the ward or village level, they can be taken to the multi-village committee. It is most important in the case of disputes over land, fisheries, and other resources. The leader of the multi-village committee concerned, but also other leaders and important persons of the village, may be called upon to preside as judge during a conflict. The verdict is usually verbal and declared publicly in the presence of fisher leaders.

Krishnapur village is represented at multi-village committee meetings by ex-fishers who include Jitendra Babu a teacher, Brozendrea Ray, a wealthy farmer and Joy Dev Babu, a leaseholder. In the wider study area, there are eleven multi-village committee leaders who are particularly important. Three are leaseholders, three are fishers (wealthy fishers who own big nets and boats), two are farmers, two are fish traders and one is a large fish trader and commission agent. Hindu Krishnapur fishers play an important role in the multi-village committee while Muslims fishers are less important and rarely attend the multi-village committee meetings held in the village. Muslims prefer to use their own networks with other Muslim fishing party leaders and leaseholders.

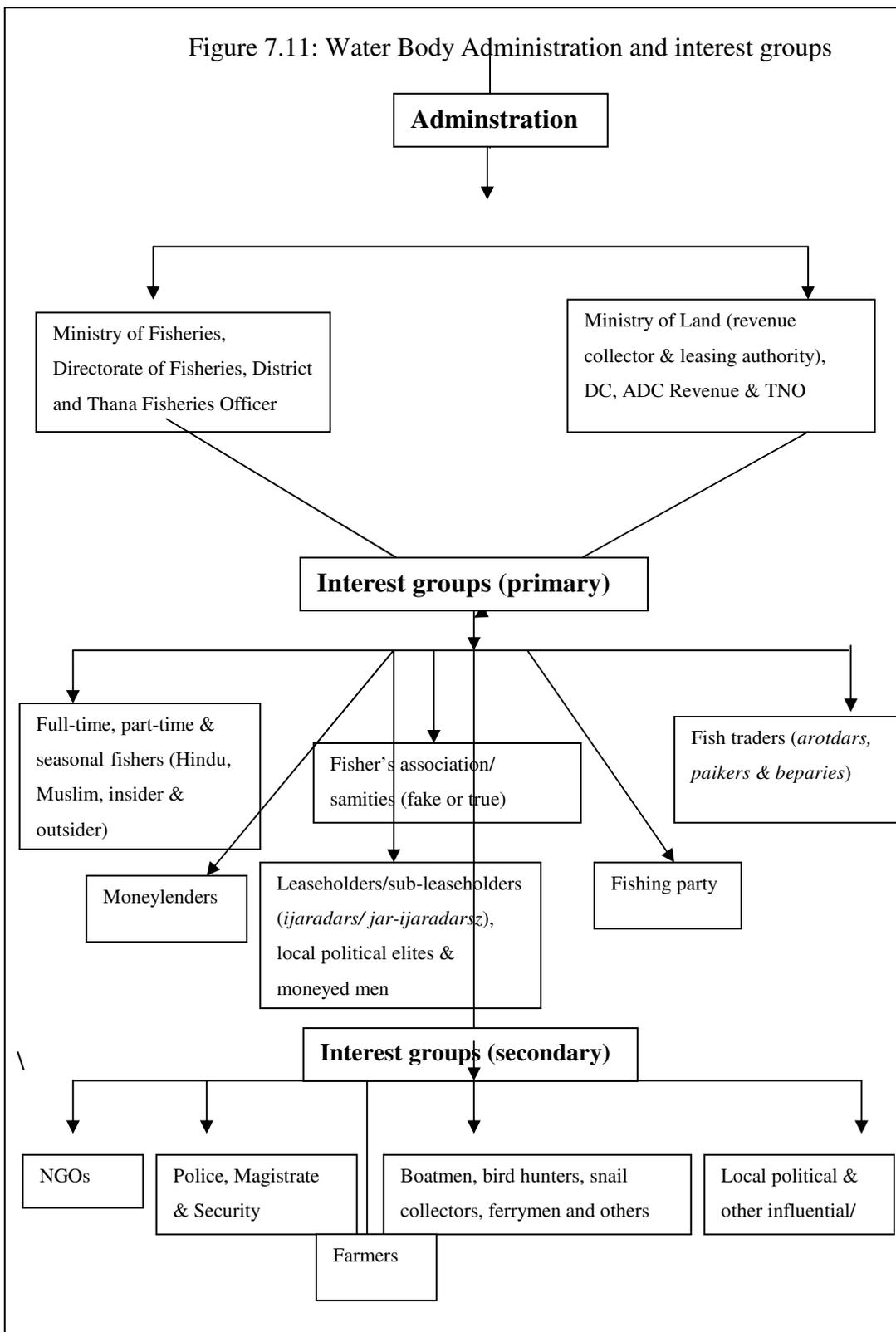
An example of how lineage, ward and village leaders are selected as multi-village committee representatives is given below for the three Krishnapur wards of Railahati, Tekkahati and. Modoillahati. Kushahati, Companyhati and Borobarirhati also have multi-village committee representatives selected through the same process.

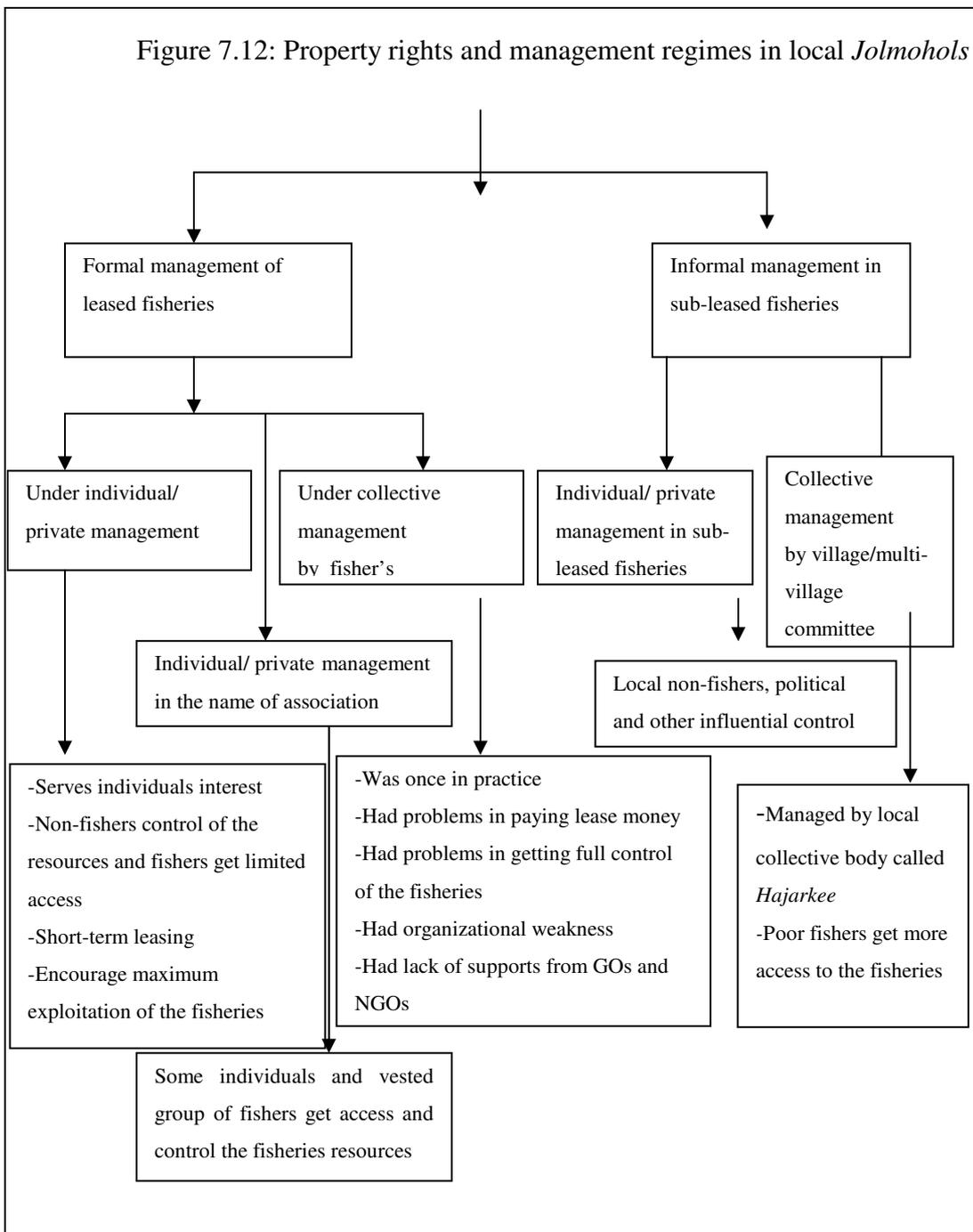
Of these three networks, the multi-village committee plays the most important role in fishers' struggles within the broader political and economic context and is discussed in greater detail below. However, it needs to be remembered that whenever a multi-village committee is activated, it has to work through the ward and village levels. For example, leaders in each village first meet with people in their own lineage, ward and village before moving to the multi-village level.

7.5. Common property fisheries resources, property rights and management of water bodies: Krishnapur fishers and their networks.

At the time of the field work, three main systems of management of water bodies operated in the study area. The two dominant systems were open water fisheries under nominal open access in Joanshaheer Depression, and open water fisheries under the open auction leasing system in Bengla Lake and the Ghorauttra River. The informal community management system was found in two sections of the Ghorauttra River, namely, Digheerpaar Bosti Fishery and Charabadha Fishery. This informal system had once operated in Bengla Lake, but had failed for reasons given below.

Figure 7.11: Water Body Administration and interest groups





7.5.1. Common property fisheries resources (CPFR) under nominal open access

When no property rights are assigned, the situation termed 'open access' exists (Allessi, 1998).

Sections of Joanshafer Depression were used by Krishnapur fishers during the monsoon. From October to January the water level declines and the land depression becomes dry by late March and fishing is not possible. Since the land depression is legally an open fishery, fishers' access should be free. However, this is not the case. Krishnapur fishers complained that access to the areas of the depression adjacent to Bengla Lake was controlled by the lake leaseholders and fishers were either not allowed or required to pay the leaseholder to fish. Some parts of the depression were also controlled by social and religious groups in the name of the development of mosques/temples under the *wakf*³ system and leased to small fishing groups usually backed by the local commission agents, traders and others.

In 2002, *wakf* holders and leasing parties organise large-scale catches using big nets, boats and screen barrage fishing (*patty bandh*⁴) in five areas. Some Muslim fishers from villages close to Krishnapur also specialized in screen barrage fishing. They openly criticised the role of District Administration and Fisheries Department for allowing *wakf* and other groups to use barrage fishing. The effect of these activities was to restrict the access of Krishnapur and other Hindu fishers to what were ostensibly open access waters.

7.5.2. CPFR under open auction leasing system

Three sections of the Ghorauttra River and Bengla Lake where an open auction leasing system is in operation has experienced a number of social and environmental problems over the last 30 years. Between 1950 and 1970, lease auctions were open to all and in the early 1970s priority were given to 'genuine' poor fishers organized through cooperatives.

Local fishers argued that short-term leases for one to three years contradicted conservation of fish resources, encouraged conflicts between fishers and non-fishers, Hindu and Muslim fishers, locals and outsiders over access rights and made poor fishers dependent on non-fisherleaseholders, fish wholesale commission agents, small and medium fish traders and local moneylenders. Fishers commented that the Ministry of Land only collected revenue from the local fisheries but did nothing to conserve fish stocks. The Department of Fisheries was also criticised for its failure to release sufficient fish fry to raise the production in open water fisheries, hiding its actions through fake statistical reports about fish fry releases. Fishers argued that such a system could not ensure the increase of productivity of fisheries resources and protect their rights. They also stated that local waterbodies now under the open auction leasing system were once under their control and that they had customary rights based on a system of mutual understanding regarding ‘who will fish where’ which had an important conservation effect. In the past, they argued, they knew that in following years they would be able to continue to fish as they left certain areas as sanctuaries which ensured a good supply of fish in the next season. This conservation effect had been destroyed by leasing to non-fishers interested only in short-term cash returns. Some local fishers expressed themselves this way:

We the fishers by tradition possess the knowledge about fish species, their growth, their movement, productivity, catch time and period, fish feed, fish habitat and environment but unfortunately we are not given the jolmohol to manage by ourselves and that is why we are suffering from a variety of problems (somoshsha) and our fisheries resources are now under threat (humkir mukhe). Time is coming when the non-fishers will throw us out (chure-fele dibe/ mere felbe) from our age-old traditional fishing profession (sonatoni peshha).

7.5.3. Informal community management in sub-leased and sub-sub-leased fisheries

One area in which Krishnapur and other fishers have had more success in ensuring better and to some degree more equitable access to leased water bodies is in two small sections of the Ghorauttra River. This success was an indirect and unanticipated result of the introduction in 1986 of a formal state initiated community management in open water inland fisheries in 300 fisheries under what was called the

New Fisheries Management Policy (NFMP). Krishnapur fishers, who earlier had obtained a direct lease of Bengla Lake but were unable to retain control of it (see below), later managed to gain informal access through the multi-village committee to sections of the Ghoauttra River

In the 1990s Krishnapur and other fishers from fifteen local villages leased in for three years a community based fishery called the Bengla-Charabadha Fishery under the name of Kaimerbali-Boali-Shibpur Fisher's Cooperative Society. The fishery was leased from 1994 to 1996 under the open auction leasing system. Bengla Lake and Charabadha, a section of the Ghorauttra River, jointly formed the fishery. The multi-village committee obtained the lease after a period of resistance from the former leaseholder. It was first formed in 1994 but was unable to get legal and financial support from the government, was opposed by local vested interests, suffered from fishers illegally accessing the water body and from the misuse of funds by some of the leaders of the committee. The committee not only lost the lease but also was unable to pay the 35 lakh tk. lease money to the Government.

Despite this failure, in 2000, the Krishnapur Fishers' Cooperative, organised through the village level committee, sub-leased from a local leaseholder the Chatirchar Mora Ganger Mur fishery, a section of Digheerpaar Bosti fishery for 120,000 tk for the first year with an increase of 10,000 tk per year for the remaining two years. Leaders of the Cooperative negotiated with interested fishers what tolls each fisher was to pay according to the type of fishing gear used. The Cooperative collected 60,000 tk in tolls from 47 units of fishing gear which included 40 *Gura* net (small net for small fish species) (40x1000), 2 *keski* net (big net for small fish species) (2x5000), and 5 *Utar* net (big net for small fish species) (5 x 2000). Another 70,000tk came from fishers doing *pile* fishing (based on 20 to 25 catches or *kheo*) and shared the catch with 20 units of *Bhim* net, with a 60:40 catch split between fishers and leaseholders, and one unit of *Jhapa* net with a 75: 25 split between fishers and leaseholder.

To obtain the sub-lease, the fishers first asked their leaders to negotiate with the primary leaseholder, Ajit Babu. This was considered a less costly option than negotiating with the district administration which required political connections,

financial and social influence and the capacity to pay bribes to administration officials to protect the fisheries from outside intervention. In addition, fishers felt that local leaseholders were easier to deal with and more considerate of fishers' interests, even when they knew that leaseholders made considerable profits from them.

A second example in which fishers sub-sub leased a water body is that of a multi-village committee which organised about 350 fishers in seven villages near Krishnapur (Kaimerbauli, Dilalpur, Boali, Gupinathpur, Boroichora, Goradhora and Shibpur). The committee sub-sub-leased the Ghoradhora section of Bengla-Charabadha fishery for a rent ranging from 120,000 to 140,000 tk between 2000 and 2002. The sub-lease holder was the brother of a local BNP MP who had obtained the original lease from Rasha Raj, the primary leaseholder of Bengla Charabadha Fishery, who got his lease in the name of Bengla-Charabadha Fisher's Cooperative Society Limited.

In getting the sub-sub-lease, fishers of each of the villages selected their leaders from their own lineage, ward and village and finally from the cluster of villages making up the multi-village committee. One of the leaders stated that before obtaining the sub-sub-lease, the fishers of these villages sat together to discuss how to obtain the lease and how their catches were to be shared. Before taking a decision, each of the village leaders had to consult with ward and village level committee leaders and then discuss the issues at the multi-village committee meeting to decide on broader action. During the lease period leaders maintained a register of the fishers who agreed to fish in the sub-sub-leased fisheries under this community management system. Fishers' leaders sometimes gave special consideration to poorer fishers who had problems paying the rent. So different fishers in different villages paid different rents for the same type of gear on the basis of decisions taken in each of the villages, taking into account fishers' economic and other circumstances. In some cases, poorer fishers were allowed to pay their toll/ rent in instalments. Many of the fishers pointed out that in the multi-village committee meeting they could express and share their problems, feel more freedom in fishing and not be exploited. Their leaders sometimes managed to pay the lease money by instalments and to bargain for certain concessions. For example, in 2001, the lease price was 130,000 tk., of which they paid. 80, 000 tk. in

the first instalment and requested a waiver on the remaining 50,000 tk., which they were granted.

The distribution of rent for different types of nets and net sizes in 2002 is given below:

Table 7.1: Rent for fishing gears by type in 2002

Name of the village	Type of gear	Number of gear	Rent per unit (tk)	Total rent in tk.
Kaimerbauli	Keski jal	10	2500	25,000
Kaimerbauli		6 (4+2)	600 400	24,00 8,00
Kaimerbauli	Gura jal	43	240 (average)	10,424
Kaimerbauli	Dholla jal	9	4,000	36,000
Goradhora, Gupinathpur, Boroichora	Dholla jal	3 (full) 1 (half)	4,000 2,000	12,000 2,000
-do-	Ghono Ber jal	4	600-700	24,75
Dilalpur	Dholla jal	3	4,000	12,000
Boali	Bhim jal	16	800	12,800
	Kona jal	8	4,00	3,200
	Dholla jal	1	2500	2,500
	Keski jal	1	2500	2,500
	Gura jal	45	500	22,500
			Total	146,699

Source: Fieldwork in Krishnapur in 2001-2002

Like other leaseholders, these fishers were also careful in protecting their fishing areas from 'illegal' fishing by fishers from other areas. They had their own security boats and guards and outside fishers were allowed to fish in their fishing areas after paying rent or sharing catch. While there were some tensions over outsiders fishing in leased areas, several multi-village committee members considered that allowing such fishing was a useful tactic as they themselves might need access to the fishing grounds of fishers from other areas. Also, they considered that fishers from other areas might become valuable allies in any future multi-village movements

7.6. Conclusion

The above discussion shows that Krishnapur fishers have very little direct access to water bodies despite the fact that they are the single largest occupational group in

Bajitpur and especially in Digheerpaar Union, a predominantly Koibortta administrative area, which includes Krishnapur. The dependence of Krishnapur and other fishers on working within a private auction leasing system where they are subordinate partners means they do not have secure and legally enforceable rights over fisheries. In addition, the Ministry of Land, the leasing authority, does not require local fishers, leaseholders or the District Administration to ensure the sustainable management of fisheries. It collects revenue from leasing, increases rents yearly to maximize revenue but does no development work. The Ministry of Fisheries and Livestock is more concerned about the sustainability of the fisheries but is politically subordinate to the Ministry of Land. While there are rules and regulation within the leasing documents relating to protection of fish stocks, these are not enforced. Thus, fishers and leaseholders do not feel any obligation to protect fish stocks. Leaseholders, who play a major role in the over-exploitation and destruction of resources, complain that the combination of increasing yearly rents and bribes paid to government officials compels them to demand greater rents from fishers. Fishers, in order to meet higher rents, fish more indiscriminately by taking all sizes of fish (which is illegal) using fine mesh nets which are banned but easily available in local markets.

Within this hierarchical system, fishers' of Krishnapur and other villages have used several strategies to gain access to a limited number of water bodies. One strategy has been to collectively lobby government to prevent the illegal leasing of open access water bodies, especially the free-flowing sections of local rivers. Another strategy has been to enter into informal and illegal sub-leasing and sub-sub-leasing arrangements with leaseholders within the wider system of formal leasing. To do this they have often drawn upon local village and multi-village networks which has enhanced their capacity to negotiate with more powerful local interests.

The next chapter summarizes the main findings and conclusions of the study and discusses briefly the broader policy questions of sustainable rural livelihoods, food security and the growing impact of regional and global changes upon local fishing communities. It concludes with a discussion on the importance of community based

fisheries management regimes for increasing production, promoting a more equitable distribution of resources, and sustaining the livelihoods of local fishing peoples.

Endnote

¹. ISPAN (1992, FAP-16) states that though there exist fisher cooperative societies in many areas, these cooperatives are in the name only. Local rich and influential people who get the lease of the water bodies using the cooperative societies as a front control them.

². _Sayar means tax/revenue on trade or water, and Sayar Jalkar means tax on the Jal Mahal

³. The word *wakf* as per Islamic law has two meanings: i) inalienable lands belonging to the Government which are charitable, and ii) pious endowments with reference to the subject matter of trusts.

⁴. *Patty bandh* is a massive and a very destructive fishing method mostly organized by the leaseholders themselves or their close associates in the rivers. According to the Fisheries Act of 1950, *Patty bandh* is strictly prohibited in open water fisheries. The leaseholders of *Bengla-Charabadha Jolmohal*, *Digheerpaar Bosti Jolmohal* and the *Nagnarkhal Jolmohal* also organize such *Patty bandh* fishing or sometimes they sub-lease certain sections of their fishery to the local specialized fishing groups for fishing by *Patty bandh*.

CHAPTER EIGHT

Summary and conclusion

8.1. Summary

A key issue facing both marine and inland artisanal fishers around the world today is that of ensuring secure and sustainable access to productive water bodies. This is particularly the case in many parts of South Asia where fishers have historically played a major role in supplying an important food item to large rural and urban populations but who are now increasingly subject to various environmental, economic and political pressures that threaten to undermine their ways of life. In South Asia over the past thirty years there has been a growth in the academic literature that documents these ways of life and the threats they face. These studies, a high proportion of which are of marine fishers, cover a range of issues such as the impact of new technologies upon traditional fishing practices, conflicts between small-scale fishers and trawling and industrial fishing, the physical risks and hazards of coastal fishing, the social organisation of fishing communities, environmental degradation of coastal and inland fishing grounds and growing state and global regulation of fishing activities. Two important research areas in which anthropologists have played an important role and which have constituted the central focus of the thesis, have been those of changing property rights regimes and their impact on fishers' access to water bodies and the role played by indigenous fishing knowledge in the organisation and meaning of fishing practices.

Academic interest in both these areas has been, in part, a reaction to models of modernisation that treated traditional fishing peoples as at best irrelevant to the modern world of fishing and at worst an obstacle to their modernisation, often defined as the introduction of highly capital-intensive fishing practices serving global markets for fish. These studies of property rights and of indigenous fishing knowledge have attempted to show that artisanal fishing peoples have ways of life worth preserving, albeit in a modified form and that they are capable of managing their fishing resources in a productive and sustainable way. There is now a vigorous

debate in the anthropological and related literature on these issues, some of which was reviewed in chapters two and three, and it was this debate that stimulated the present study.

Chapter two argued that in the general and specialised literature on marine and inland fishing communities, there had been little ethnographic interest shown in inland open capture fisheries, particularly in Bangladesh, which contains some of the richest inland fishing grounds in the world and is home to some of the oldest fishing communities in the region. Furthermore, little was known of how these fishers gained access to and managed water bodies and the kinds of knowledge they possessed in organising their fishing practices. In the light of this neglect, it was argued that there was a need for a detailed ethnographic study of the Hindu Koibortta caste which constitutes the oldest and largest of the inland Hindu fishing communities in Bangladesh. The village of Krishnapur located in the Koibortta heartland was chosen for detailed study.

Chapter three provided a brief historical account of the changing property rights regimes which have regulated Koibortta fishing activities since 1793. It was shown that under the British, Pakistani and Bangladeshi governments there were several legal and other changes in property rights which resulted in a removal of fishers' customary common property rights in many lakes, land depression and river fisheries and the introduction of a state-directed privatisation of particular water bodies and their transfer to mainly wealthy and politically connected non-fisher leaseholders.

Chapter four described the rich wetland environment of Northeast Bangladesh in which Krishnapur village is located and summarised the history of Koibortta settlement in the area. It showed how the village and its environs have been affected in recent decades by various environmental, economic, social and legal changes which have made fishers' lives more insecure. Among the main environmental and demographic changes contributing to growing insecurity were siltation caused by flooding and run-off, water pollution and the reduction of water flow in the major river systems primarily because of the Indian Farakka Barrage, pesticide run-off from farming, conversion of water areas to cropland and increased population pressure on

declining water bodies. Reinforcing these trends was the growing control of the diminishing water bodies by non-fisher interests.

Chapter five provided a broad introduction to village life in Krishnapur. It showed that fishers own few assets, including land, and that they attempt to diversify their sources of income through various petty activities such as farm labouring and small-scale trading. However, local opportunities are few and incomes from them low. The village was shown to be stratified with a small minority of fishers and traders who own land, fishing gear and other assets, control local fish trading networks and organise group fishing, hiring fish workers from Krishnapur and other villages. Women play important if subordinate roles providing ancillary services such as net making, itself a declining activity. They did not fish, except for some hook fishing close to the shore. Finally, relations between Hindu fishers and their Muslim neighbours were discussed. While relations were generally good, the Hindu fishers of Krishnapur regard themselves as a religious and economic minority in the region and as such were sometimes subject to political and economic pressure which occasionally resulted in violence and looting of properties. Their minority status also made them cautious in their dealings with leaseholders, the majority of whom were Muslim.

Chapter six focused on the indigenous fishing knowledge of the villagers of Krishnapur and examined in detail the main kinds of fishing activities engaged in, including types of fishing gear used, the relationship between fishing activities and types of water bodies, the size of fishing parties, the main actors in the organisation of fishing parties and fish marketing and the financial and other relationships with fish traders and commission agents. It was shown that fishers are part of extensive production and marketing activities which extend all the way to the country's main cities and even overseas. Again, the Krishnapur fishers depend on non-fishers to dispose of their catches, which further increases their economic dependence in the absence of any fisher marketing cooperatives or other collective means to market catches. Finally the chapter looked at fishers' knowledge of water bodies, fish movements, fish diseases and the various rituals which focused on ensuring fishers' security, good catches and the general prosperity of the community. These rituals

were shown to be embedded within specifically Bengali Hindu notions of the supernatural which helped define their identity as Hindus and as fishers.

Some of the evidence presented in the chapter suggests that despite the many changes that have occurred in their fishing environment, Krishnapur fishers have managed to adapt to some of these changes through integrating them into their fishing practices and by widening their fishing networks to include fishers from other Hindu villages in the study area. For example, they have selectively adopted more sophisticated fishing gear such as current nets, modified traditional gear by using new synthetic fibres in their production, in some cases shifted to larger scale fishing using large nets, mechanized traditional boats, introduced freezing compartments into boat holds, and used artificial feed substances in sanctuaries to enhance fish growth. As a result, many fishers now utilize a variety of different fishing technologies, whereas they previously used a more limited number of capture methods.

These technological and organisational changes again have developed in parallel with modified forms of credit arrangements between fishers, traders, commission agents and micro-credit agencies (largely used by women). For example, the shift to larger scale fishing, the introduction of freezing compartments and the greater use of mechanised boats to transport catches more quickly to markets, have generated a greater demand for loans from fish traders and commission agents. These changes have meant a greater integration of fishers into a nation-wide market for fish and fish products, which also extends overseas. The shift to more group fishing has required greater coordination of fishing effort which has resulted in a more complex division of labour and greater economic stratification in fishing parties. There has also been an extension of Krishnapur fishers' relations with the growing number of Muslims who have entered fishing over the past 50 years.

In the face of these changes, Krishnapur fishers have retained a strong sense of their identity as professional Hindu fishers of long-standing. An important means by which this identity has been maintained has been through their use of specifically Hindu social networks, a subject that was taken up in chapter seven.

Chapter seven examined the history of struggles since 1950 between Krishnapur and other fishers and Government authorities and leaseholders over access to local water bodies. This was followed by a description of present-day negotiations and conflicts between local fishers and the leasing authority and leaseholders. Finally, the chapter examined how Krishnapur and other local fishers used social networks linking lineages, wards, villages and clusters of villages to mobilise fishers and to negotiate with leaseholders to gain access to selected water bodies.

Despite the use of local Hindu social networks of lineage, ward, village and clusters of villages, Krishnapur fishers have never been able to obtain secure and long-term direct control from the government over any significant or highly productive water bodies in the area. Rather, the only way they were able to gain limited access was through sub-leasing or sub-sub leasing of some of the sections of already leased water bodies, some of which were of lower productivity than sections retained by leaseholders. Three examples from two water bodies were given to illustrate the strengths and weaknesses of fishers' collective efforts in gaining access and managing one lake and sections of a river.

Part of the reason for fishers' lack of success in establishing some form of community management was the failure of government to provide them with effective and continuing political and technical support. This was illustrated in the case of cooperative societies where government made no effort to ensure that such cooperatives were established and run effectively by fishers themselves or that they had sufficient finances from their own members to pay for leases. What usually happened was that non-fishers financed what were, in fact, fake cooperatives, sometimes in collusion with fishers' leaders. Government and NGO bodies provided no support for capacity building or technical staff to work with fishers to improve their fishing practices.

Another example of government failure to support fishers was the 1995 decision by the BNP Government to allow open access on flowing rivers. This populist move, which was aimed at convincing fishers that the government was pro-fisher, had a contrary impact. Both fishers and non-fishers saw this as an opportunity to fish at will as there was now no official protection for fishers, which resulted in increased

conflicts between fishers and non-fishers and even among fishers themselves. Hindu fishers, in particular, felt very insecure as they were pressured not to fish in many river sections that they had fished previously. This open access policy did not last in many of the free flowing sections of the rivers because the Ministry of Land experienced a drop in its official leasing revenues and wished to recuperate those losses. Also, many local officials connected to the Ministry were deprived of lucrative illegal commissions from leasing.

Many of the changes described in the thesis point to the declining economic and political status of Hindu fishers in Bangladesh and their growing dependence on the majority Muslim community. They rely increasingly on patron-client relations with leaseholders, the majority of whom are Muslim and strongly linked to government officials and politicians. The changes they have made in their fishing practices and organisation of fishing through the use of new technologies and through drawing on long-standing social networks in their relations with the powerful interest groups that control fishing leases have helped them adapt to changing political and economic realities. However, this adaptation has not given them greater long-term security of access to fishing grounds. Without such security, something that requires greater national and local government commitment to implementing community-based management systems, the Koibortta fishers of Krishnapur will remain a relatively poor and socially stigmatised religious, economic and political minority.

8.2. Conclusion

Among the various questions raised by the thesis, two are of particular importance and relate to the capacity of small-scale fishers to manage collectively their own resources. One is to what extent are small-scale fishers like those of Krishnapur village capable of managing their fishing resources and the second is to what extent they can do this in a more sustainable and equitable way than under other management systems such as private leasing or state fisheries?

With regard to the first question, the evidence from two of the case studies suggests that fishers possess variable capacity to manage their own resources. In the case of the Bangla-Charabhada Fishery, they raised their own funds to take leases, shared

fish catches in an agreed manner and accommodated a large number of fishers from several local villages to fish on a small area. To achieve this they drew on multi-village and other social networks. However, they were unable to retain control of the water body for more than three years as they lacked sufficient funds to pay the lease and bribe money; were often indebted to commission agents who sold on their catches; were subject to looting of catches and illegal fishing by political hooligans backed by local leaseholders and their supporters; and were given no legal, financial and physical protection by government and non-government organisations.

In the case of the informal sub- and sub-sub leasing arrangement with the primary leaseholder, they drew on collective bargaining skills developed over a long period, arranged the distribution of catches with the leaseholder and sub-leaseholder and member fishers, and through village and multi-village level discussions decided on catch shares, rent for specific gear and fishing spots. However, this was on a limited scale and was, in fact, an illegal arrangement which reduced fishers' longer-term security. Also, informal leasing was much more expensive than formal leasing and drained their financial resources rapidly.

These examples show that in a few instances fishers did gain access to particular water bodies, were able to exert a degree of autonomy from leaseholders and others in organising fishing activities and possessed the fishing skills and knowledge to earn a modest living. What they lacked was an institutional framework that provided financial, logistical and legal incentives to support their longer-term and more secure control of productive water bodies. This observation lends support to other studies of fisheries in Bangladesh which point to a lack of governmental support at all levels, a failure to take into account broader 'community' interests that go beyond fishers (the multi-stakeholder approach), a history of poor conflict management resolution mechanisms, and a lack of a well defined communities and water bodies over which territorial rights are to be exercised as among the key factors in fishers' lack of success in managing collectively fish and fish resources.

Whether Krishnapur fishers can manage their resources more equitably and sustainably; that is, in such a way as not to undermine the fish carrying capacity of the water bodies, is more difficult to answer. Part of the reason for this is that in

modern times Krishnapur fishers have rarely had direct control over any local fishing grounds for a sufficiently long period to demonstrate their capacity as fair and environmentally responsible managers. The limited evidence presented suggests that in those instances where Krishnapur and other local fishers drew on local social networks to mobilise fishers and organise fishing activities, many fishers expressed satisfaction with the allocation of catches. However, such allocations were always within an asset ownership framework which favoured the better-off fishers with larger nets and better boats.

Whether Krishnapur fishers can manage their fishing resources sustainably is less clear. Many fishers said their and other's fishing practices were putting a considerable strain on the carrying capacity of the various water bodies they fished. However, within the existing property rights regime, they considered that they had little choice but to catch as many fish as possible in order to survive. Krishnapur fishers' fishing effort was only a small component of a much larger body of fishers and 'outsider' interests such as leaseholders, traders and government officials. To assess properly Krishnapur fishers' impact on fish stocks and the broader carrying capacity of particular water bodies would require a more comprehensive, comparative and multi-disciplinary analysis of the relationship between fishing practices, fish stocks, broader environmental changes and the wider national and international political economy of fisheries than was possible in this study. Such an analysis should be given high research priority.

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APPENDICES

APPENDIX 1.1: INFORMED CONSENT FORM

Participants in the Study of Inland Fishers Community

My name is Saifur Rashid and I am currently enrolled in PhD studies at Curtin University in the School of Social Sciences. To the best of my knowledge, the fishers of Bangladesh are one of the most important occupational groups but until recently the policy makers, planners and researchers largely ignored them. Still there is still no ethnography on inland fisher community of Bangladesh. Thus the primary objective of the present ethnographic study is to provide a detailed ethnographic report on an important but little researched fishing community of Bangladesh. The data and their analysis under this study will be of particular value in uncovering the different social, economic, political and environmental aspects of the fishing community. It will also help to know how professional fishers construct and organize their fishing environments; the nature and organization of their production process with its gender, class and age based aspects and to know the ways in which fishers organize their access to water bodies and their relationships with leaseholders, traders, farmers and other non-fishers intermediaries. All the collected data and information will be used for writing the Ph.D. thesis and thereafter to publish articles and books prior to the permission of the participants. The research findings will be of important for the future policy planners and development workers in making plan and taking development program for the betterment of the fishing people of Bangladesh.

Information for this study will be collected during fieldwork through census, survey, interviews, formal and informal discussions and participant observation. A number of tools including camera, audio-visual recorder, diary / notebooks will be used for documentation. The interview will take place at a suitable time for both yourself and the researcher over a period of time. You will have sufficient time to verify the accuracy of the data analysis.

During the interview you can decline to answer any question and request that tape-recorder to be turned off. No names will appear in the field notes or in the transcribed interview. Extracts of the interview may be used in the research report; however you will not be identified in any way. Your participation in giving interview is absolutely voluntary and you can withdraw at any time without any obligation. Every precaution will be taken to protect your anonymity.

If you have any question or concern regarding the study please do not hesitate to contact me to the address given below. You may also contact my supervisor Dr. Bob Pokrant, Senior Lecturer in Anthropology, School of Social sciences, Curtin University of Technology, Perth, Western Australia.

Participants Statement

I, -----, have read the above information relating to the study of inland fisher community. I understand the nature and intent of the study and have the opportunity to ask questions. I know where to direct future questions that I may have. I have received a copy of the consent form. I understand that my participation is voluntary and that I may withdraw myself at any time.

Signed----- Participant Date-----

Signed-----Researcher Date-----

APPENDIX 1.2: THE BENCHMARK SURVEY OF KRISHNAPUR

Name of the Para.....Interviewer.....Date..... Household No.....

Sl no	Name of the HH & other members	Age	Sex M=1 F=2	Education Ill: 0 Prim: 1 Secon: 2 Higher: 3	Relation with HH	Primary Occup	Other Occu	Type of family	Land ownership pattern								
									Own land		Lease		Mortgage		Sharecrop		Total
									Home- stead	Culti- vable	In	Out	In	Out	In	Out	
1																	
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	

Occupation Code: Fishing-1, Agri-2, Labourer-3, Business-4, Service-5, Housewife-6, Boat Plyer-7, Rickshaw/ Van Puller-8,

Fish trading- 9, Ijaradar-10, Aratdar-11, Unemployed-12, Others-13

APPENDIX 2.1: MAJOR HINDU AND MUSLIM FISHING CASTES IN BENGAL/BANGLADESH

Among the many fishing communities identified are the Hindu Koibortta/*Kaivarta*, *Kewat*, *Mala/Jhala/Malo/Jhalo*, *Tyar/Tiwar (Rajbangshi)*, *Pod*, *Das Shikari (Rasbangshi origin)*, *Beua (Namasudra sub-caste)*, *Jiani (Namasudra sub-caste in Bakergonj & Faridpur)*, *Karal/Charal (a sub-caste of Namasudra)*, *Bind/Bindu*, *Bagdi*, *Patni (Ferryman)*, *Nadial*, *Mali/Mahuimale*, *Gonshi/Gunhre/Mollah*, *Lohati/Lohati-kuri*, *Barpar (sub-caste of Gonrhi)*, *Mureari/Maryare/Mariyari*, *Mala* and *Surahiya/Kalwat-Mallah* and Muslim *Mahimal /Maimal /Mahemahal*, *Maheforash*, *Chaklai*, *Datiya/Dal atiya*, *Dhawa/Katwar*, *Gutiya/Jalia*, *Nikare*, *Jiani (Nikari in Rajshahi)*, *Abdal (a branche of Bebajiya)*, *Bebajiya/ Bediya/ Mal Baidya*, *Kunjara/Kunjra*, *Dohariya/Dohuriya*, *Pajar/Pazhra/Pajara (possibly Nikari)*, *Chandal*, *Musalman Bugde*, *Machua* and *Magh (Pokrant, 1996a, 1996b)*.

APPENDIX 3.1: FISHERIES POLICIES, REGULATION AND ACTS FROM 1793-2004

	Policy/ Regulation/Decision	Year of adoption
A.	Fisheries policy/regulations/laws	
1.	Permanent Settlement Act/ <i>Zamindary</i> System	1793
2.	Introduction of leasing system for navigable rivers or parts of the rivers	1859
3.	Fish Protection and Conservation Act. 1887, India	1887
4.	The Tank Improvement Act 1939	1939
5.	The East Bengal Protection and Conservation of Fish Act 1950	1950
6.	Abolition of <i>Zamindary System</i> / Permanent Settlement Act under State Acquisition Act 1950	1950
7.	Water body/ <i>Jolmohol</i> Management Policy of MOL	1950
8.	Leasing Priority to Fishers Cooperative Society	1965
9.	Transfer of <i>Jolmohol</i> to MOFL from MOL	1980
10.	<i>Jolmohal</i> returned to MOL from MOFL	1983
11.	Marine Fisheries Ordinance and Rules	1983
12.	Fish and Fish Product (Fish inspection and quality control ordinance 1983)	1983
13.	<i>Jolmohol</i> up to 20 acres transferred to Upazila Parishad	1984
14.	New Fisheries Management Policy	1987
15.	Declaration of open access to free flowing river fishery	1995
16.	<i>Jolmohal</i> (closed) up to 20 acres withdrawn from UpazilaoParishad and placed with MOYS	1997
17.	National Fisheries policy	1998
18.	Ban on Shrimp Fry Collection from natural water	2000
B	Water Policy	1990
C	Environment Policy	1992
D	Land Use Policy	2001

Source: Adapted from Ali et al. 2003

APPENDIX 3.2: FISHERIES DEVELOPMENT INITIATIVES IN BANGLADESH

Both governmental and international development organisations that are actively involved with fisheries management and development in Bangladesh include the Department of Fisheries (DOF), World Bank (WB), Asian Development Bank (ADB), DFID (Department for International Development, UK), United States Agency for International Development (USAID), the United Nations Development Programme (UNDP), International Centre for Living Aquatic Resources Management (ICLARM), Swedish International Development Agency (SIDA), Danish International Development Agency (DANIDA), Ford Foundation, the World Conservation Union (IUCN) and others. Several projects between government organizations (GOs), non-government organisations (NGOs), and fishing communities have emerged out of these partnerships. Major development initiatives undertaken in the fisheries sector in last two decades include the Third Fisheries Project (TFP) (1991-96), the Second Aquaculture Project (1989-96), the Fourth Fisheries Project (FFP) (1998-2005), Community Based Fisheries Management Project (CBFM) Phase 1& 2 (1995-2006), Management of Aquatic Ecosystem through Community Husbandry (MAACH 1998-2003), Oxbow Lake Small Scale Fisheries Project Phase 1 & 2 (1989-1996), Fisheries Resources Development and Management under New Fisheries Management Policy (1999-2003) and the Empowerment of Coastal Fisher folk in Conservation and Management of Coastal Fisheries Resource for Food Security (2000-2004) (Coastal Fisheries) (Ali et al., 2003).

Some of these programmes and projects are supported technically and financially by the WB/DFID (1st through 4th Fisheries projects), ADB/IFAD (2nd Aquaculture Development Project), International Centre for Living Aquatic Resources Management (ICLARM) and the Ford Foundation. ICLARM in partnership with the Government of Bangladesh (represented by the Department of Fisheries) and a number of NGO's (development organisations) namely BRAC, PROSHIKA, CARITAS, and Friends in Village Development Bangladesh, implemented a five-year project (1995) called "Improved Management of Open Water Fisheries". The

objective of the program was to identify the fishery commons, develop local institutions and increase the participation of local fishers in the making and enforcing of resource use rules. The project also tested how to involve different local resource users (stakeholders) in the management of open water common property fisheries resources. The ICLARM community based fisheries management project helped in the development of local management committees that improve cooperation among the fishers and the wider community. This ensured that conflicts could be mediated before they became widespread (See Ahmed et al., 2002; Ahmed et al., 1995).

The Bangladesh Fisheries Research Institute (BFRI) and the International Centre for Living Aquatic Resources Management (ICLARM) have generated new and profitable technologies (farming systems involving species suitable for polyculture, monoculture, and integrated culture, e.g. fish–rice, fish–poultry–duck). Moreover, some of the demonstration projects have contributed significantly to the adoption of these and other technologies. Such projects include the Mymensingh Aquaculture Extension Project (MAEP) funded by the Government of Bangladesh and the Danish agency DANIDA, the North-western Fisheries Project funded by the UK agency DFID, and the efforts of NGOs. A large number of other NGOs have fish and shrimp culture projects with landless, small and marginal farmers, and the productivity of these ponds is usually higher than many privately managed ponds. These continued initiatives have certainly led to increase overall production as well as productivity of the culture fisheries. However, many of these efforts are localised, and their widespread adoption is hampered by the poverty of the fishermen and the lack of credit access.

APPENDIX 3.4: COURT INJUNCTION ON FISHING IN GHORAUTTRA RIVER

সংখ্যা ১২০৭-সিএসএ-১০৩৬/২০
১৪০৭ Dhaka Monday 29 May 2000

নগর ও অন্যান্য

ভূমি সচিবসহ ৭ জনের উপর রুলনিশি

**কিশোরগঞ্জে নদী ইজারা প্রদান
ও মাস স্থগিত রাখার নির্দেশ**

সুপ্রিম কোর্ট প্রতিবেদক : কিশোরগঞ্জ জেলার বাজিতপুর থানার উপর দিয়ে প্রবাহিত ঘোড়াউত্রা নদীকে বন্ধ জলমহাল দিয়ে ইজারা প্রদানকে বেসে বেআইনি এবং কার্যত্ববিহীন ঘোষণা করা হবে না। আপীল ও সস্ত্রাহের মধ্যে তার কারণ শুনানির জন্যে গতকাল রোববার হাইকোর্টের একটি ডিভিশন বেঞ্চ ভূমি সচিবসহ ৭ জনের উপর রুল জারি করেছেন।

একই আদেশে আদালত আপীলী ও মাস পর্যন্ত ইজারা প্রদান স্থগিত রাখার জন্যও নির্দেশ দিয়েছেন।

উল্লেখ্য, ভারতের মেঘালয় থেকে শুরু হয়ে সুনামগঞ্জ, নেত্রকোনা এবং কিশোরগঞ্জের উপর দিয়ে প্রবাহিত ঘোড়াউত্রা নদীতে এসে মেঘনায় মিশেছে।

এটি একটি দীর্ঘ উন্মুক্ত নদী। এ নদীতে অবশ্যে মাস ধরার অধিকারের দাবিতে বাংলাদেশ জেলে ফেডারেশনের নেতৃত্বে জেলে সমাজ দীর্ঘদিন আন্দোলন করে এসেছে এবং আন্দোলনের এক পর্যায়ে জনৈক ইজারাদারের ওলিতে জেলে কর্মীদের সিদ্দিকীর উপর হামলা

**টান্সাইলে আংশিক
হরতাল পালিত**

টান্সাইল থেকে নিজর সংবাদদাতা : কাদের সিদ্দিকী বীর উত্তমের উপর পুলিশ হামলার প্রতিবাদে রোববার কৃষক শ্রমিক জনতা লীগের ডাকে সকাল ৬টা থেকে

সঞ্জীব দাস ১৯৯২ সালের ২৯শে ডিসেম্বরে মারা যায়।

পরে জীতে এ আন্দোলন দেশব্যাপী ছড়িয়ে পড়লে সরকার ১৯৯৫ সালের ১৪ই সেপ্টেম্বরে এক আইনবলে 'খোলা নদী'র ইজারাপ্রথা বিলুপ্ত করে গরিব জেলেনদের বিনা খাজনায় মৎস্য আহরণের ব্যবস্থা নেয়ার জন্যে জেলা ও থানা প্রশাসনকে নির্দেশ প্রদান করেন।

কিন্তু বাজিতপুরসহ হাওরাঞ্চলের প্রায় সবগুলো নদীকে বিভিন্ন ভাগে বিভক্ত করে বন্ধ জলমহাল দেখিয়ে স্বার্থায়েমী মহল এক শ্রেণীর অসাধু কর্মকর্তা ও নব্য ইজারাদাররা প্রকৃত গরিব জেলেনদের তাদের আইনি অধিকার থেকে বঞ্চিত করে আসছে।

এ বিষয়ে বিভিন্ন মন্ত্রণালয়ে দরখাস্ত করে ও ধরনা দিয়ে কোন ফল না পেয়ে বাজিতপুর অঞ্চলের ৩ জেলে এবং জেলে ফেডারেশনের সাধারণ সম্পাদক হাইকোর্টের আইনজীবী হাসনাত কাইয়ুম 'জনস্বার্থে' একটি রিট আবেদন দায়ের করলে আদালত উপরোক্ত আদেশ প্রদান করেন।

বিচারপতি কে এম হাসান এবং বিচারপতি ঝাদেমুল ইসলাম চৌধুরী সমন্বয়ে গঠিত একটি ডিভিশন বেঞ্চ মামলাটি পরিচালনা করেন এডভোকেট জহুরুল ইসলাম মুকুল এবং তাকে সহায়তা করেন আবেদনকারী এডভোকেট হাসনাত কাইয়ুম। রট্রপক্ষে সহকারী এটর্নি জেনারেল প্রবীর নিয়োগী আদালতে উপস্থিত ছিলেন।

নির্মালেশ্বরী ও সঙ্গী

The Daily Sangbad, 27 May 2000

APPENDIX 4.1: FISHERIES RESOURCES IN MYMENSING & KISHOREGANJ

The Eastern region of Bangladesh, the greater Sylhet and Mymensingh including Kishoreganj cover an area of approximately 24, 500 sq. km of floodplain land depressions. Kishoreganj District, where the study area Krishnapur is located has got a very large area of such depressions, rivers and estuaries and has significant contribution to the country's total inland fish production. According to the DOF statistics of 1999-2000, Mymensingh including Kishoreganj was on the first position among ten top inland fish producing districts of Bangladesh and in that year, it had 100666 mt of total inland fish catch, of which river catch was 8309 mt, floodplains catch was 73,479 mt (highest compare to other districts) and lake and land depressions catch was 18,878 mt (2nd highest after Sylhet 27,217 mt).

APPENDIX 5.1: SOME BASIC INFORMATION ON THE STUDY AREA

Name of the village	Krishnapur
Name of the Upazila	Bajitpur
Name of the District	Kishoregonj
Agro-Ecological Zone	Sylhet <i>Haor</i> Basin (Bhati Anchal/ Bhati Elaka))
Geographical region	North-East Region
Water region	Wetland/ Floodplains Region
Fisheries region	Inland Open water Capture Fisheries
Types of local water bodies	River, Depression, Lake and Floodplains
Name of the local major water bodies	Ghorauttra Nadi, Chara Badha Fishery, Joanshafer, Adkubla & Bedelatshwar <i>Haor</i> , Bengla & Digha Lake. <i>Krishnapur</i> fishermen mostly fish in Ghorauttra River, Charabadha Fishery, Joanshah <i>Haor</i> and Bengla Lake)
Name of the fishing communities under Study	Koibortta (Hindu)
Name of other local fishing communities	Jalo, Malo, Tyor, Barman and Namasudra
Total number of fishing population in the locality	10,000 (Approx)
Name of the major fishing Villages depend on the same local fisheries resources	Goradhora, Kaimarbali, Mialdi, Digeerpar, Shobharampur, <i>Krishnapur</i> , Kokrail, Kachuakhala, Noagaon, Shibpur, Boalia, Gupinathpur, Dilalpur, Maichchar, Noahata, Homairpur
Total Number of Population and number of Households in the Village	1624 & 302

Total number of Koibortta fishing families in the Village	82.45percent (Live in six Paras/ Hati)
Total number of Muslim fishing households in the village	17.55percent (Live in one Para)
Major activities related to fishing	Fish Catching, Fish Trading, Fish Drying, Net Making, Fishing Boat Making,
Name of the NGO's working in the area	BRAC, PROSHIKA, RAC, MUM, POPPY, DAMCO, Grameen Bank
Local informal social body of the fishing Communities	Lineage, Ward/village committee & Multi-village committee
Total area of the study village	1.5 Sq.Km
Total population in Bajitpur Upazilla & Digirpar Union	197,081 & 34,018 (Census 1991)
Total para in the village	7 (6 are absolutely Hindu Paras and only 1 is Muslim Para)
Total Muslim and Hindu population in Bajitpur Upazila	Muslim: 172432, Hindu: 22631 (1991)
Total Muslim & Hindu population in Digheerpaar Union	Muslim: 27117, Hindu: 6075 (1991)

Source: Fieldwork in Krishnapur in 2001-2002

APPENDIX 5.2: DAILY FISH CONSUMPTION AND DIETARY HABIT OF KRISHNAPUR FISHERS

Fishers category		First Day	Second Day	Third Day
Case-1: Marginal	Breakfast	Panta bhat with pura morich & salt	Panta with pura morich	Panta & pura morich
	Lunch	Bhat with choto/ gura maach & sobji	Rice with gura maach & sobji	Bhat with gura maach & sobji
	Dinner	Repeat	Repeat	Repeat
Case-2: Marginal	Breakfast	Panta & morich	Pant & morich	No food
	Lunch	Bhat with gura maach	Bhat, sutki & egg plant	Bhat & gura maach
	Dinner	Repeat	Repeat	Ruti & gura maach
Case-3: Small	Breakfast	Ruti & gur	Muri & gur	Panta & morich
	Lunch	Bhat & gura maach	Bhat gura maach & sobji	Bhat, gura maach & sobji
	Dinner	Repeat	Repeat	Repeat

Case-4: Marginal	Breakfast	Panta and eggplant	Muri & cha	Bhat & gura maach
	Lunch	Bhat, sutki & sobji	Bhat & dal	Repeat
	Dinner	Bhat & sutki	Repeat with milk	Repeat with milk
Case-5: Poor	Breakfast	Panta & sutki varta	Ruti & gur	Ruti & gur
	Lunch	Bhat & sutki	Bhat, sutki varta & misti kumra	Bhat, sutki varta & dal
	Dinner	Ruti & sutki	Repeat	Bhat & dal
Case-6: Marginal	Breakfast	Ruti & gur	Muri & gur	Muri & gur
	Lunch	Bhat, banana & milk	Bhat, gura maach and okra	Bhat, gura maach & okra
	Dinner	Ruti & banana	Bhat & dal	Repeat
Case-7: Poor	Breakfast	Ruti & gur	Muri & gur	Muri & gur
	Lunch	Bhat, sutki varta & misti kumra	Bhat, dal & misti kumra	Bhat, sutki & sobji
	Dinner	Repeat	Bhat, sutki & dal	Bhat & gura maach
Case-8: Small	Breakfast	Muri & gur	Muri & gur	Panta, gura maach and sobji
	Lunch	Bhat & sutki	Bhat & sutki	Bhat, chicken, fish & milk
	Dinner	Bhat & dal	Bhat, sutki & sobji	Bhat, maach, dal & milk

Panta bhat: left over rice with water & salt, *Chotomaach/gura maach/panchmishali*: it includes puti, mola, keski, baim, baila, chanda and other small fish varieties, *Ruti*: home hand made flat bread from low quality flour (ata), *Gur*: indigenous sweet made of sugarcane, *Muri*: popped rice, *Dal*: lentil/pulse, *Sutki*: dry fish mostly made of bad quality fish (rotten), most common *sutki* is puti/ sidal. *Sutki* is generally eaten as *varta* (*sutki* smesh with some strong spices like red chillies, onion and others) or as curry with some vegetables. *Sobji*: vegetables.

**APPENDIX 6.1: AVAILABLE FISH SPECIES WITH UNIT PRICE (KLG/M)
2001-2002**

Local name	National Name	Scientific Name	Price Per kg.
Rou	Rui/Ruhi	<i>Labeo rohita</i>	60-170 Tk
Kailla Baus	Kali baus	<i>Labeo kalbasu</i>	100-150 Tk
Katla	Katla, Katal	<i>Catla catla</i>	50-150 Tk
Mirha Mrikha Mirka	Mirgal, Mirga	<i>Cirrhinus mrigala</i>	40-50 Tk.
Chanda	Lal Chanda (Glassy fish)	<i>Chanda ranga</i>	30 – 40 Tk.
Koi	Koi (Climbing perch)	<i>Anabus testudineus</i>	60 – 100 Tk.
Kaikka	Kaikka, Kakila (Garfish)	<i>Xenentodon cancila</i>	50-60 kg.
Jat puti	Jat puti, Bhadiputi (puti)	<i>Puntius sophore</i>	20 – 30 Tk.
Chailpa	Chapila (River shad)	<i>Gadusia chapra</i>	50 – 60 Tk.
Ilsha	Ilsha, Ilisha, Hilsha	<i>Hilsa Ilisha</i>	70-100 Tk
Daira	Mini, Roina, Bheda	<i>Nandus nandus</i>	40 – 50 Tk
Futka	Patka, Tapa	<i>Tetraodon cututia</i>	Local people do not eat this fish
Buzuri	Bozori tengr (tengra)	<i>Mystus aptengra</i>	50 – 60 Tk
Aire (Gagat)	Aire	<i>Mystus aor</i>	50 - 100 Tk
Gaura	Ghaura	<i>Clupisoma gaura</i>	60 – 80 Tk
Gulsha	Gulsha, Kabashi tengra	<i>Mystus caasius</i>	60 – 80 Tk
Rita	Rita	<i>Rita rita</i>	100 - 150 Tk
Mola	Mpla, Maya	<i>Amblypharyngodon mola</i>	60 – 70 Tk

Local name	National Name	Scientific Name	Price Per kg.
Eloin	Silong	<i>Silonia silondia</i>	40 – 50 Tk
Fangas	Pungas	<i>Pangasius pangasius</i>	120 - 180 Tk
Kechki	Kachki	<i>Corica soborna</i>	50 – 60 Tk
Paibba	Pabdah	<i>Ompok pabda</i>	100 - 110 Tk
Kanla	Falli, Foloi (Gey feltherback)	<i>Notopterus notopterus</i>	40 – 50 Tk
Chital	Chital (Humbed Featherback)	<i>Notoptenus chitala</i>	70 – 100 Tk
Koilla	Khalisha (Gaiant gourami)	<i>Collisa fasciatus</i>	30 – 40 Tk
Chela	Chela, narkalichela	<i>Salmostoma bacaila</i>	
Ing	Shing, shingi	<i>Heteropneustes fossilis</i>	100 – 120 Tk
Magur	Magur	<i>Clarias batrachus</i>	100 – 120 Tk
Bosa	Bacha	<i>Eutropichthys vacha</i>	80 – 110 Tk
Boal	Boal	<i>Wallago attu</i>	50 – 100 Tk
Kajuli	Kajuli	<i>Ailia coila</i>	60 – 80 Tk
Chirha	Gochi	<i>Mastacembelus</i>	30 – 50 Tk
Tarabaim	Tarabaim (one stripe spiny cel)	<i>Macrognathus aculeatus</i>	60 – 70 Tk
Barabaim	Shalbaim	<i>Mastacembelus armatus</i>	80 – 120 Tk
Ladi Bhabani	Rani	<i>Botia dario</i>	100 – 120 Tk
Gutum	Gutum	<i>Lepidocephalus guntea</i>	50 – 60 Tk
Sjoil/Shoal	Shoal Styriped snakehead)	<i>Channa striatus</i>	40 – 60 Tk
Ladi	Taki, Lata Spotted snakehead)	<i>Channa punctatus</i>	30 – 50 Tk
Kanohona ni	Kanpona, Choukani	<i>Aplocheilus panchax</i>

Local name	National Name	Scientific Name	Price Per kg.
Bailla	Bele	<i>Glossogobnius giuries</i>	50 – 70 Tk
Elong	Elang	<i>Rasbora clanga</i>	40 – 50 Tk
Mashol	Mohashol	<i>Tor putitora</i>	.Extict.
Kalla	Malla (Freshwater mullet)	<i>Mugil corsula</i>	40 – 60 Tk
Gila painna	Lohasura, Dhipali	<i>Rohtee cotio</i>	.Not available
Gainna	Ghainna, Kurchi	<i>Labeo goniuis</i>	40 – 60 Tk
Nandin	Nandina, Nandil	<i>Labco nandina</i>	Rare species
Kharchona	Fulchela	<i>Salmostoma phulo</i>	50 – 60 Tk
Khash khaira	Kashkhaira	<i>Chela lauduca</i>	50 – 60 Tk
Chanda	Nama chanda chanda	<i>Chanda nama</i>	40 – 50 Tk
Ektoitta/Sh obol	Ekthota (half beak)	<i>Hyporhamphjus gaimarde</i>	30 – 40 Tk (Rare species)
Bamosh	Bamosh/Bao	<i>Anguilla bengalensis</i>	150 – 200 Tk
Beushi	Guizza Air, Talla Air(Giant river catfish)	<i>Mystus seenghala</i>	60-80 Tk (rare)
Nagori bacha	Muribacha	<i>Clupisoma muries</i>	70 – 80 Tk
Alone	Batashi (Indean potasi)	<i>Pseudeutropius atherinoides</i>	40 – 50 Tk
Ugal	Cheng, Telo Taki	<i>Channa orientalis</i>	20 – 25 Tk
Bagai	Baghair (Gangetic goonch)	<i>Bagarius bagarius</i>	30 – 100 Tk
Gagla	Kutkanti	<i>Hara hara</i>	60-80 Tk (rare)
Nahit	Napit, Koi Bandi	<i>badis badis</i>	50-60 Tk (rare)
Bengra	Cheka, Chega (Indean chaca)	<i>Chaca chaca</i>	40 – 50 Tk

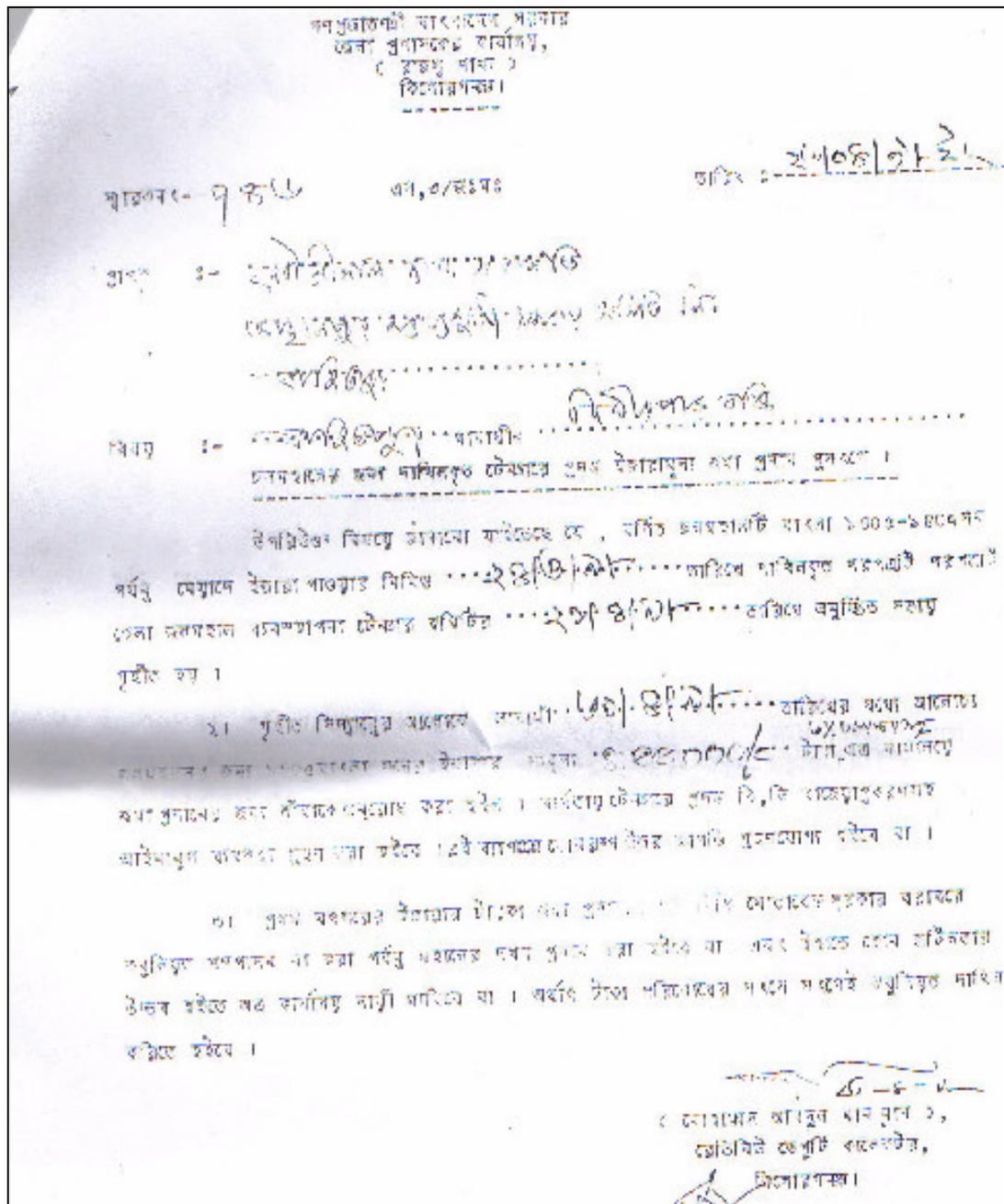
Local name	National Name	Scientific Name	Price Per kg.
Paira Gudum	Pahari gutum/Ganga sagar	<i>Somileptes gongota</i>	60 – 70 Tk
Sada Gutum	Bilturi/Balichata	<i>Nemacheilus botia</i>	50—60 Tk (rare)
Sharang Chingri	Galda chingri (Giant Frishwater prawn)	<i>Macrobrachium rosenbergil</i>	1000 – 120 Tk
Chada/Kal a chingri	Bagda chingri (giant tiger shrimp)	<i>Penaeus mondon</i>	180 – 220 Tk
Dima chingri	Bagatara chingri (green tiger shrimp)	<i>Penaeus semisulcatus</i>	110 – 120 Tk
Galla Chingri	Dorakata (Kuruma shrimp)	<i>penaeus japoricus</i>	160-250 Tk
Katta chingri	Horina/Loilla chingri (Speckled shrimp)	<i>Metapenaeus monoceros</i>	100-150 Tk
Sadha chingri	Bara chama chingri (Rainbow shrimp)	<i>Parapenaeopsis sculptilis</i>	Not available
Icha gura	Ruda chingri	<i>Paraeceopsis stylifera</i>	40 – 60 Tk

Some marine fishes available in the Local River

Local name	National Name	Scientific Name	Price Per kg.
Chanda	Taka Chanda (Shortnose ponyfish)	<i>Leiognathus brevirostres</i>	100-150 Tk
Koila	Chan chanda (Moon fish)	<i>Mene macyulata</i>	100-150 Tk
Footka	Potka (puffer fishj)	<i>Chelonodon patoca</i>	20-30 Tk
Kaikka	Gang kakila (Black spot brgtom)	<i>Belone strong lurus</i>	40-50 Tk
Tel kupi	Sadha datina (Lind silver grunter)	<i>Pomadasyys hasta</i>	40-50 Tk

Chela	Karati chela (Wolf hering)	<i>Chirocentrus dorab</i>	60-70 Tk
Kolla	Achila (Lizzard fish)	<i>Saurida tumbil</i>	80 – 90 Tk
Ashosh	badami Diddut maachh (Tropedo, Electric ray)	<i>Narcine brumac</i>	Extinct
Kahs Khauri	Chukya (big eye ilish,jewelled shad)	<i>Ilish filigera</i>	50 – 60 Tk
Poma/Poa	Lalpoa (silver ponnah cruaker)	<i>Johnius argentatus</i>	30 – 40 Tk
Teha/Taka	Mahabar mouri (Malabar cavalla)	<i>Carangoides malabaricus</i>	Extinct
Mashul	Sonalilbata (Goat fish)	<i>Upencus sulphurcus</i>	Rare spices
Goong	Sukura (Tripod fish)	<i>Tricanthus brevirostris</i>	70 – 80 Tk

APPENDIX 7.1: LEASE PAYMENT & DEED DOCUMENTS



APPENDIX 7.2: FISHERS' APPLICATION TO THE MINISTRY OF LAND

Tapas Kanti Das, a member of Baliardi union parishad along with other fisher leaders put another application (9/7/2001) on behalf of the fishers of a number of local villages to the State Minister of Land for declaring 613.92 acres of free flowing river areas of Bengla as open fisheries basing on the field investigation report of the Revenue Deputy Collector (dated 28/4/2001) submitted to District Commissioner and the recommendation letter forwarded to the Ministry of Land by the District Commissioner (circular no:868 S.A.Ja.Ma). A estimation of production was also given by Rasha Raj Das, Secretary, Digheerpaar Charabadha Matsyajeebee Samity, Noagao, Patuli, Bajitpur in 27/01/2000 (circular no: 868 S.A.Ja.Ma, Total area: 1334.07 acres, Mouzas: Digheerpaar, Sharsher Dighee, Patuli, Dilalpur, and Kaimerbauli.

Name of the representative	Name of the village
Tapas Kanti	Kaimerbauli
Anil Chandra Das	Kachuakhala
Anil Chandra	Boali
Sumeshwar Das	Kaimerbauli
Sunil Chandra	Dilalpur
Nagendra Chandra	Dilalpur
Shambhu Chandra	Goradhara
Shambhu Das	Boali
Promud Das	Boali
Gourilal Das	Krishnapur
Khitish Das	Krishnapur
Nagendra Chandra Das	Krishnapur
Ranjit Das	Krishnapur
Kalicharan Das	Shibpur

Bengla-Charabadha fishery with a total area of 1334.07 acres covers the Mouzas: Digheerpaar, Sharsher Dighee, Patuli, Dilalpur, Kaimerbauli J.L No: 07, 09, and 31. Of these 1334.07 acres of *Jolmohol*, about 600 acres (1500 bighas) of the fisheries are fish production area. 200 kg of fish can be produced in each bigha of this production area. If average price of 1kg fish were 100 tk, then total return from 1 *bigha* of water area would be 20,000tk and for the whole fisheries would be

300,000tk (3 Crore). They mentioned that in the fisheries, they will have 3 files (1 file is counted for 3 years) and 1 small file/t file (locally called *kacha file*) in 10 years period of time and will produce altogether about 10.5crore taka fish. Thus total cost for 10 year period of time would be 7.2 crore taka (as per their estimation). About 5 crore taka will be spent for the development of fishing ground/sanctuaries with bamboo, forestation and others. Taka 1 crore will be spent for paying the lease money and another 1.2 crore for fish feed, security and others.

APPENDIX 7.3: SOCIAL AND ECONOMIC BACKGROUND OF SOME LEASEHOLDERS OF BAJIPUR

Name of the person	Place from	Social background
Kanchan Mia	Kuliarchar	Industrialist/Fish Exporter
Kader Mia	Bhairab	Fish Traders/ Aratders
Monaem Kha	Homairpur	Was a minister
Mohananda Babu	Austagram	Fish Traders/ Fishing Party
Mr. Monju	Digheerpaar/Bajitpur	Member of the Parliament
Aziz Mia	Digheerpaar/Bajitpur	Local Awami League Leader
Mr. Khurshed Alam	Bajitpur	Construction Contractor

APPENDIX 7.4: LIST OF FISHERS' ASSOCIATION OF BAJITPUR

According to the information given by Thana Fisheries Officer, there are 14 fisher's *samities* in Bajitpur. Of these, following are the majors:

- 1 Krishnapur Matsyajeebee Samabay Samity Limited
- 2 Boali Matsyajeebee Samabay Samity Limited
- 3 Kaimerbauli Matsyajeebee Samabay Samity Limited
- 4 Dilalpur Matsyajeebee Samabay Samity Limited
- 5 Goradhora Matsyajeebee Samabay Samity Limited
- 6 Digheerpaar-Charabadha Matsyajeebee Samabay Samity Limited
- 7 Chatirchar Matsyajeebee Samabay Samity Limited
- 8 Noahata Matsyajeebee Samabay Samity Limited
- 9 Shibpur Boali Matsyajeebee Samabay Samity Limited)

Most of these fishers associations are formed and financially backed by the leaseholders, who are generally the local business and political elites, fish *arotdars* (traders) and moneylenders.

APPENDIX 7.5: KISHOREGONJ DC'S CIRCULAR FOR LEASING WATER BODIES

District Commissioner has the authority to lease out the water bodies (*jolmohol*) and sand belt (*balumohol* of above 20acres. In this connection, Revenue Section of the District Commissioner office of Kishoregonj issued a circular on “Sayrat Mohol Leasing” (1/98) on 5/3/1998 for leasing out their *jolmohols* for 3 year period of time and the *balumohols* for 1 year period of time from the Bengali year 1405 to 1407 under the following conditions. Leasing of *Digheerpaar Bosti Jolmohol* was done under these conditions and Gourilal Das as the President of *Krishnapur Matsyajeebee Samabay Samity Ltd* obtained that lease for 3-year period of time from 1405-1407. A detailed description of the conditions of that leasing process has been given below:

1. First day of the tender will be confined within the registered fishers’ cooperative societies. All the *samities* that intend to participate in leasing process should attach their registration documents obtaining from the district/ Thana cooperative officer. Applications submitted by secretary/ president of the *samities* will be accepted. But in the following tender, both samity and individual can participate. For individual application, applicant should mention his name/address correctly and attach one letter of introduction from the chairman of the union parishad.

1. One can purchase tender schedule before the first day of tender dropping. Tender schedule price for the lease price of below 5lac taka *jolmohol/ balumohol* is 200 (cash & non-refundable) and above 5lac is Tk.500 (cash & non-refundable). Tender schedule can be purchased from Divisional Commissioner Office, Dhaka and District Commissioner office, Revenue Section, Kishoregonj and all TNO offices.
2. On the tender dropping day, tender can be dropped in the tender box kept in the District Commissioner office, Revenue Section and all the TNO offices by 1pm and tender will be opened at 2pm on the same day at the presence of

tender droppers. But tender committee meeting will be held at the District Commissioner office.

3. Every tender dropper has to attach a pay order/ bank draft of 10% value of the lease price withdraws able from any commercial bank of Kishoregonj in favour of District Commissioner, Kishoregonj. Highest bidder has to pay 50% of the tender price after acceptance of his tender and the rest 50% within the next 7 days. After the payment of full amount, there will be one lease agreement between the lessee and the leaseholder. For the *jolmohol*, leaseholder has to pay the lease money for the following years just before one month of following year.
4. If the bidding price does not exceed minimum 25% of the previous lease price, tender will not be accepted.
5. Sayrat Mohols, which have court cases and have injunctions from the Ministry, will not be leased out until any further decisions.
6. Information regarding *Sayrat Mohols topsil*, location, and lease price for the year, information regarding court cases, ministry injunction, name of the sayrat mohol and other conditions of leasing can be obtained from the District Commissioner office, Revenue section in any working day.
7. Leaseholder, in any situation, cannot sublease the *jolmohal* or any part of the *jalmohal* and successful bidder has to accept the lease of the *jolmohal* according to the given conditions. Before submitting the tender, tender dropper should visit the *Jalmoholl Balumohol*. Any objection after bidding the tender will not be accepted.
8. Every leaseholder should abide by all the present rules of the government related to the leasing of *jalmohols* and also any further future decision related leasing of sayrat mohol.
9. *Samities* or individuals who did not pay the lease money in time during their previous leasing period, their tender for further leasing will not be accepted.
10. The authority preserves the right to accept any tender and also has right to increase/ decrease the *topsils* of the *jolmohols*.

11. Officially leasing period will start from 1st Baishakh, even if it is done in the middle of the year. Leaseholder has to consider that time/period, which has already been past. Every *samity* or individual who obtain the lease will have to pay 3% tax/revenue according to the government recent decision.

APPENDIX 7.6: A FIELD REPORT ON THE FISHERIES DISPUTE

To resolve that dispute, District Commissioner Revenue asked a field report from Assistant Commissioner of Land, Bajitpur and in the field report of A.C Land (10/6.1997, Circular no: 258), it was suggested that for better management, *Bengla-Charabadha* fisheries should be divided into 3 different *jolmohols* within different *mouzas* and *dags*. On the basis of that report, Deputy Commissioner of Kishoregonj issued a circular that *separate* leasing of these 3 *Jolmohols* will be implemented from the Bengali year 1404. The *mouza* and *dag* distribution of those *jolmohols* were also given in that circular.

APPENDIX 7.7: MAJOR LINEAGES IN KRISHNAPUR

Other Hindu lineages are Das Gwati, Company Gwati, Haranath Gwati, Rashik Lal Gwati, Shukdev Gwati, Banabashi Gwati, Hiralal Gwati, Chandra Dhars Gwati, Gagan Chandra Gwati, and Mohesh Gwati. The Muslim ward has 5 lineages which are Damor Bari Gwati, Inter Bari gwati, Prema Gwati, Bholamiar Gwati and Kashi Barir Gwati.

APPENDIX 7.8: MULTI-VILLAGE REPRESENTATIVES OF KRISHNAPUR

Krishnadhan, Girendra and Emrul for Kushahati, Jitendra and Joy Dev for Companyhati and Brojendra, Prodeep and Avinash for Borobarirhati.