Government of the Peoples Republic of Bangladesh
Flood Action Plan

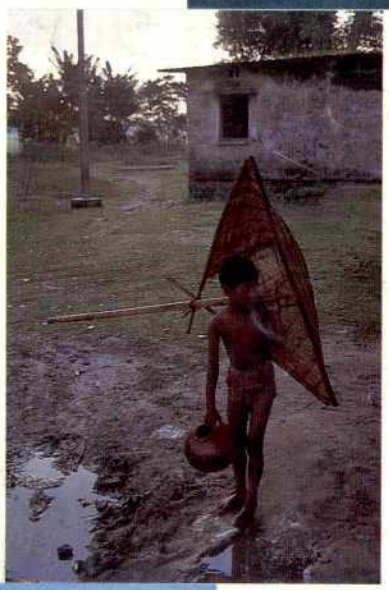
FAP 17

Fisheries Studies and Pilot Project

FINAL REPORT

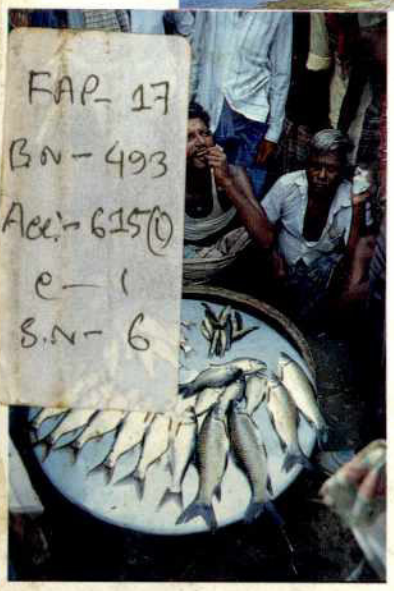
(Draft)

JUNE 1994



Special Study

Supporting Volume No. 21



FISHERIES LEASING AND ACCESS IN THE NORTH EAST REGION

ODA
Overseas Development Administration, U.K.

Special study

FAP 17

FINAL REPORT

SUPPORTING VOLUME NO. 21

** Draft **

SPECIAL STUDY

Fisheries Leasing and Access in the North East Region

A-44

FAP 17
FISHERIES STUDIES
AND PILOT PROJECT

June, 1994

Prepared for the Government of Bangladesh

TABLE OF CONTENTS

LIST OF CONTENTS (Contd.)

LIST OF CONTENTS (Contd.)

7

LIST OF TABLES

LIST OF FIGURES

SUMMARY

1. The study is one of the socioeconomic components of the Fisheries Studies and Pilot Project (FAP 17). It was undertaken to improve understanding of the management, costs, earnings, harvesting and sharing arrangements in the fisheries of the North East Region. This document reports the results of the study, which examined 10 of the region's fisheries, as a series of case studies.

2. The objectives of the study are:

   - to enhance understanding of how changes in management, control, value, and size affect a water body's productivity and revenue generation potential;
   - to identify the social status and community background of the leaseholders; and
   - to obtain a detailed picture of leaseholders' costs and earnings[1] and the sharing arrangements they have with fishermen and sublessees.

3. This report consists of an introductory chapter that describes the existing leasing policy of the Government of Bangladesh (supported by an appendix on the historical development of leasing controls in the country). This is followed by the 10 case studies and a final chapter that summarizes the findings of the case studies.

4. FAP 17 selected the North East Region for study because the water bodies of its *haor* basin are the most stringently controlled of all the country's inland fisheries. They are also among the country's largest inland waters.

5. In 1980, the Department of Fisheries (DoF) assumed control of *jalmahal* leasing with a mandate to enhance development of the fisheries sector. In 1985 The DoF introduced its New Fisheries Management Policy (NFMP) on 150 water bodies throughout the country; 46 of these were in Sunamganj District[2], one of the areas FAP 17 selected for its examination of the leasing system. Under the NFMP water bodies are no longer leased out to individuals or fishermen's cooperative societies

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[1] In practice it was often impossible to get detailed information about leaseholders' earnings from their fisheries. This has made the last objective somewhat less informative than was hoped.

[2] The number of bodies under NFMP was later reduced to 26 by the *Jalmahal* Management Committee.

(FCS) by open auction. Instead, the responsible agency auctions gear licenses to members of local cooperatives. A district-level official called the Additional Deputy Commissioner (Revenue), or ADC(R), conducts the auction and awards the lease to the highest bidder. Control of the system, including the identification of acceptable license holders, is the responsibility of the *thana* fisheries committee.

6. Certain features built into the revised leasing system under the NFMP have made it practically impossible for the system to achieve its distributional intentions. Notably, fishing communities have quickly been priced out of the market by the automatic raising of base lease fees by 25% from one lease period to another. Only by borrowing increasingly large sums from local *mahajan*, and in turn surrendering effective control to the lender, have fishing communities maintained even a nominal title to access rights.

7. The leasing system theoretically extracts a portion of a fishery's production in exchange for managing the transfer of leasing rights. In several cases examined, however, the transfer of those rights was either complicated by bureaucratic wrangling or subject to official corruption.

8. Lessees are clearly able to manipulate the leasing system to achieve their own ends. It is obvious in many cases that wealthy leaseholders have circumvented the intentions of the NFMP simply by starting or assuming control over a fishermen's cooperative. Part of the reason for this is that the cost of obtaining a lease has risen beyond the means of most fishing communities and fishermen's cooperatives. The only way they can retain even a small measure of control over a fishery is to barter their name in exchange for work.

9. The use of political or bureaucratic power or even brute force is apparently viewed as a legitimate means of obtaining or retaining one's hold on a lease. This can, and frequently does, result in prolonged legal battles that can halt fishing activities on a water body. Lessees often have politically advantageous positions because they represent the local power structure and have links to higher levels of government.

10. Based on the cases examined, there is no apparent consistency in leasing terms. Lease periods range from one year to six years, but ADC(R) officials, whether to increase government revenue or for other reasons, exhibit a preference for shorter periods.

11. Not only have leases become more costly, the investment required to operate a fishery too has risen out of the reach of fishermen and their cooperatives. Investors, including wealthy businessmen, moneylenders (*mahajan*) and influential bureaucrats, with the necessary funds have therefore assumed this role. While the leasing fee itself often accounts for the highest proportion of the total cost, large sums are also spent on guarding the fishery against unauthorized fishing. The other major expense frequently is the cost of constructing *katha* in the *beel* to improve catch efficiency.

12. Although the cost of operating a *beel* fishery can be high, particularly in areas where such operations are not well served by the transportation network, the fisheries appear to be profitable enterprises. In the only cases where data was supplied, Patasinga *beel*, Kastochaprar *beel* and Baro Haor *beel*, the lessee made a reasonable profit from his operations. In most other cases, profitability can be assumed from the apparent high level of competition to obtain the lease, or from leaseholders' willingness to pay ever increasing fees to get the holding rights to the fishery.

13. In the cases examined, most of the benefit went to the leaseholder.In all cases, the fishermen worked on a catch-share basis at rates ranging from 10% upward. Given the apparent profitability of these water bodies, the amount going to the fishermen seems particularly small. Indeed, the amount earned may be barely enough for subsistence living. It seems clear, therefore, that in the existing catch-share arrangement, the leaseholder rarely considers the welfare or interests of the fishermen who work for him.

14. In two fisheries located within areas of full flood control, leaseholders complained that embankments and regulators had reduced fish migrations between rivers and floodplains and lowered catches. A third fishery was located inside an area of partial flood control using submersible embankments. Here, the leaseholder made no comment on the effects of flood control.

15. Most leaseholders interviewed for this study complained about siltation in their fishery. Siltation has a negative impact on *katha* fishing by effectively lowering water levels and reducing the volume of dry season habitat for fish. In addition, siltation encourages those living around a *beel* to cultivate land that formerly was part of a fishery.

16. Some of the conditions surrounding the issue of leases also influence fishery productivity. Delays in the issuing of leases in several cases left too little time for the lessee to carry out any measures that could have increased productivity. These delays were usually connected with demands for bribes to issue the lease, although they can also occur as a result of duplicate issuing of leases and subsequent court cases. Conflicts over leases can also prevent the implementation of conservation measures.

17. Lessees of the *beel* studied almost never undertook development activities on their water bodies. According to several of those interviewed, the short-term leasing of *jalmahal* is responsible for this situation. When leaseholders are issued fishing rights for short periods, they are not inclined to take any more than a short-term view of a fishery's productivity. As a result, they confine their investment to protecting their immediate interests, reap what they can while they hold the lease and, if they bid for the lease again, they are likely to offer a lower fee because the fishery is poorly managed.

INTRODUCTION

1.1 Background

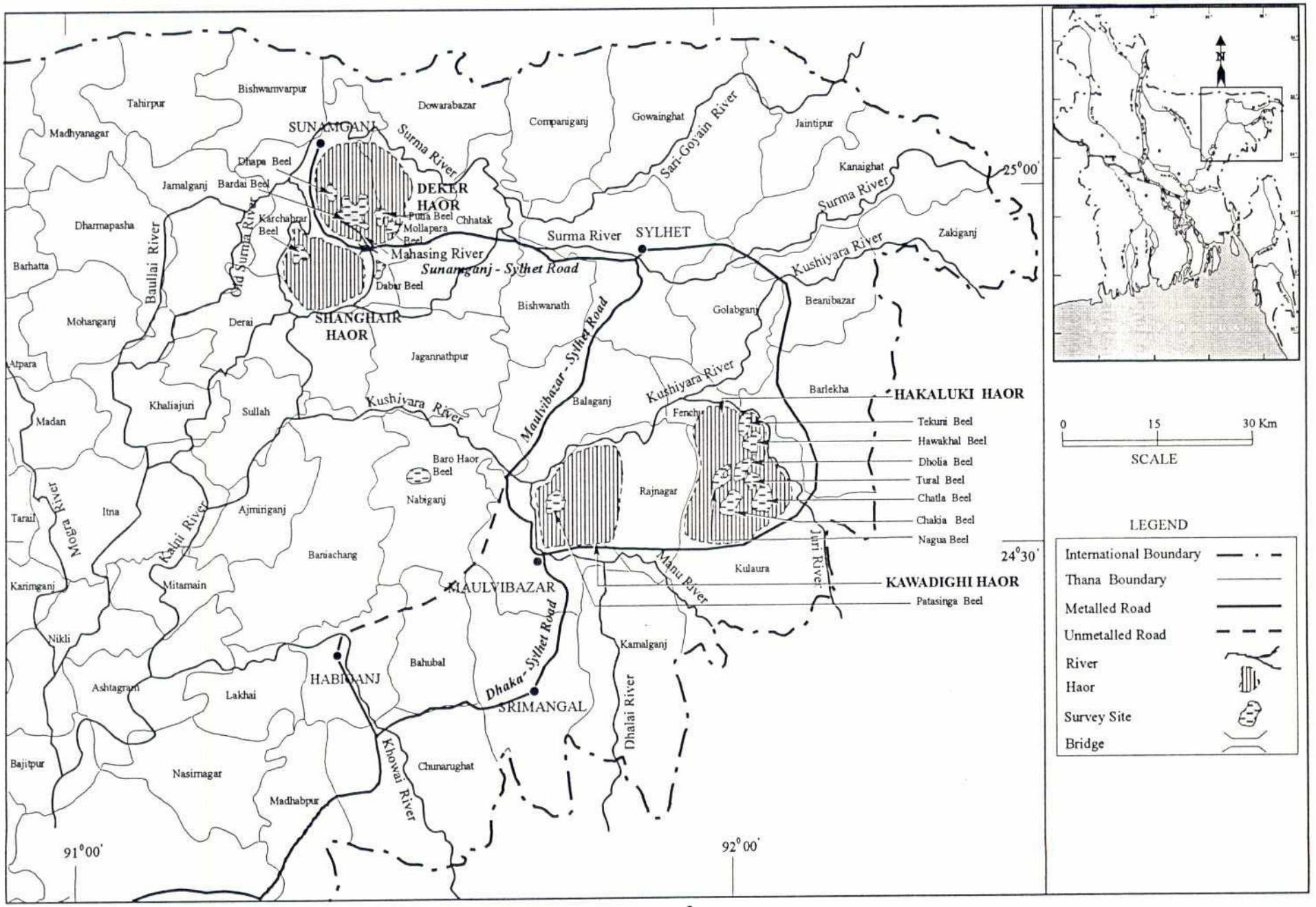
The fisheries of the *haor* basin have long been an important part of the socioeconomic life of Bangladesh's North East Region. The traditional fishermen of the *haor* historically have controlled some of the largest inland fisheries resources in the country. But the access these fishermen have to the water bodies of the North East has changed over the past two decades. Traditional fishermen are increasingly being deprived of access to fisheries or finding their access more limited as wealthy non-fishermen take advantage of the investment opportunities offered by the area's numerous *beel*. This is in large part due to the government's leasing policy, which despite attempts at revision, has largely remained under the influence of the rural elite and local officials.

Control over the access to resources is the single most important issue in the fisheries of the North East Region. Everywhere in Bangladesh formal and informal access arrangements determine the distribution of fisheries benefits, but the historical and cultural context of the *haor* basin has resulted in a far stronger leasing system than is found elsewhere in Bangladesh.

The government's administrative control of the fishing rights to the water bodies of the *haor* basin lies with the Land Revenue Department of the Ministry of Land, which leases the water estates (*jalmahal*) through public auction. Holding rights to water bodies are awarded to the highest bidder, who may then either sublet the rights to someone else or operate the fishery himself. The share of the catch that the sublessee or the fishermen employed by the lessee retains is entirely controlled by the leaseholder himself. The government retains no control over the harvesting of fish or sharing of fisheries resources.

To better understand the management, costs, earnings, harvesting and sharing arrangements in the fisheries of the North East, FAP 17 undertook a Leasing and Access Arrangements Study. This study is one of the socioeconomic components of the FAP 17 Fisheries Studies and Pilot Project. FAP 17 is funded by the British Overseas Development Administration (ODA) together with the Government of Bangladesh (GoB). The national implementing agency for the Fisheries Studies is the Department of Fisheries (DoF) of the Ministry of Fisheries and Livestock (MFL). FAP 17 also reports to the Flood Plan Coordination Organisation (FPCO) of the Ministry of Water Resources.

Figure 1.1 Leaseholder study sites in the North East Region



The leasing system, discussed in detail in Chapter 2, is intended to provide the government with revenue as well as to assist in the orderly transfer of fishing rights from one party to another. Since the early 1980s the system also has attempted to ensure that traditional fishermen have an equal opportunity to hold the rights to a water body. Although legal provisions have been made to accomplish this, the economics of fishing, not only in the North East but throughout Bangladesh, has resulted in increasing marginalization for rural fishing communities. *Jalmahal* leases are more costly than simple fishermen or their cooperatives can afford on their own. Moreover, the investment required to operate a *beel* fishery has risen out of their reach. In their place has grown a league of investors that includes wealthy businessmen, moneylenders (*mahajan*) and influential bureaucrats with the funds to take control of the fisheries.

The operation of a commercial fishery in the North East, often in *beel* many miles from the nearest village, creates special logistical problems for those who would exploit the resources of these water bodies. Sizeable investments are necessary to support fishermen spending two to four months of the year in a temporary community far out in the centre of the *haor*. In addition, most fishing crews require advances on prospective earnings or wages to prepare gear and hire new members, and it is usually the leaseholder who is approached to provide these loans. In addition, the efficient harvesting of the *beel* requires a large amount of structural investment in *katha* (brush piles), *bana* (bamboo barriers) and netting. Some leaseholders also re-excavate channels that are in danger of silting up and affecting the flow of water to and from the *beel*.

The distribution of fisheries benefits is critically important to assessing the socioeconomic impacts that flood control may have on these resources. Most anecdotal evidence suggests that, over the past two decades, the leasing system has significantly reduced the proportion of fishery benefits going to local people. This is at least in part due to a perceived tendency for leases to go to outsiders, such as members of the urban elite who have the financial muscle and bureaucratic influence to win the leases. Other economic and social factors also play a part in this, however. As lease prices and investment costs continue to rise, the leaseholder, in order to make a profit, seeks to cut costs where he can, which is all too often done by cutting the shares of fishermen. Moreover, an outsider is less likely than a local person to exhibit any concern about the economic state of the local people and may, because of hostile local politics, bear considerable animosity toward their community.

The Leasing and Access Arrangements Study particularly sought, through examining specific examples, to clarify and amplify understanding of the issues that surround lease management, fisheries costs and benefit distribution.

1.2 Objectives of the Study

This study aims to provide a more precise, detailed understanding of the role leaseholders play in the fisheries of the North East Region. Its specific objectives are:

- to enhance understanding of how changes in management, control, size and value affect a water body's productivity and revenue-generation potential;
- to identify the social status and community background of the leaseholders; and
- to obtain a detailed picture of leaseholders' costs and earnings[3] and the sharing arrangements they have with fishermen and sublessees.

1.3 Methodology

Interviews with the leaseholders of the 10 fisheries, and fishermen working in the *beel*, were conducted during January and February 1994. The information gathered was supplemented with data collected by the FAP 17 fisheries assessment teams that were permanently stationed at several leaseholder camps to monitor daily catch and effort.

The following table lists the names of the 10 fisheries selected for this study; their locations are shown in Figure 1.1. Dekker and Hakaluki *haor* are unprotected by flood schemes. Shanghair *haor* is partially protected by a submersible embankment scheme, and Kawadighi Hoar is within the full flood control area of the Manu Irrigation Project, which is subject to deliberate embankment breaching by public cuts in years of high flood.

3 In practice it was often impossible to get detailed information about leaseholders' earnings from their fisheries. This has made the last objective somewhat less informative than was hoped.

Name	Location	In/Out FCD
Patasinga *beel*	Kawadighi *haor*	In
Nagua-Dholia Group Fishery	Hakaluki *haor*	Out
Tekuni Group Fishery	Hakaluki *haor*	Out
Chatla *beel*	Hakaluki *haor*	Out
Tural *beel*	Hakaluki *haor*	Out
Kastochaprar *beel*	Shanghair *haor*	In
Barodai Katuganga Group Fishery	Dekker *haor*	Out
Dabur-Putia-Mollapara Group Fishery	Dekker *haor*	Out
Dhapa *beel*	Dekker *haor*	Out
Baro *Haor beel*	Shaka Borak Project	In

1.4 Structure of the Report

Chapter 2 of this report, in combination with the Appendix, presents the historical context within which the current leasing system operates. Chapters 3 through 12 are each devoted to one of the 10 FAP 17 case studies. The final chapter presents the conclusions of the study.

JALMAHAL LEASING: AN OVERVIEW

2.1 Introduction

Pre-colonial Bengal was divided into many small kingdoms governed by independent rulers whose domains, demarcated by the region's vast river systems, consisted of agricultural land, forests, hills and, of course, fisheries. Since land was abundant and the population small by comparison, the amount of land capable of producing revenue for the government was limited. Under these circumstances water bodies supporting fisheries were considered waste land and escaped tax regulations. As time passed, however, the demand for food increased, as did the need for more state revenue, resulting in growing pressure on the physical and economic productivity of land and such natural resources as fisheries.

To improve revenue collection, as well as to broaden the range of properties subject to taxation, a series of land reforms were undertaken from the 18th to the 20th centuries. These culminated in the State Acquisition and Tenancy Act of 1950 (the Appendix summarizes the historical development of these reforms). The 1950 act, together with its subsequent amendments and additional legislation, constitutes the principal platform for current policies affecting fisheries. Through the mechanisms of this body of law the state acquired vast tracts of land. Most of this *khas* land consisted of so-called waste land—*beel, haor, baor* and other water bodies used for fisheries.

Under the *zamindari* system of the colonial era such water bodies were consolidated into water estates. Access to these *jalmahal* was controlled by the *zamindar* (called a *mirasdar* in the North East), and his revenue-collecting intermediaries, who were generally selected from among the members of traditional fishing communities. Following the abolition of the *zamindari* system in 1952, control of the *jalmahal* passed to the Land Revenue Department. The department leased out fisheries rights to these water bodies through open auctions held either at the Thana Land Revenue Office or the District Land Revenue Office. The open auction theoretically gave everyone an equal opportunity to obtain a fisheries lease, with the highest bidder receiving the leaseholder rights to the water body.

In practice, however, the intermediary revenue collectors of the *zamindari* system, using their connections with the government, the rural elite and fishing communities, took over control of fisheries access.

In 1980, the Department of Fisheries (DoF) assumed control of *jalmahal* leasing with a mandate to enhance development of the fisheries sector. In 1985, the DoF introduced its New Fisheries Management Policy (NFMP) on 150 water bodies throughout the country; 46 of these were in Sunamganj District[4], one area FAP 17 selected for this examination of the leasing system. Under the NFMP, water bodies are no longer leased to individuals or fishermen's cooperative societies (FCS) by open auction. Instead, gear licenses are auctioned to members of local cooperatives. A district-level official called the Additional Deputy Commissioner (Revenue), or ADC(R), conducts the auction and awards the lease to the highest bidder. Control of the system, including the identification of acceptable license holders, is the responsibility of the *thana* fisheries committee.

Certain features built into the revised leasing system under the NFMP have made it practically impossible for the system to achieve its distributional intentions. Notably, fishing communities have quickly been priced out of the market by the automatic raising of base lease fees by 25% from one lease period to another. Only by borrowing increasingly large sums from local *mahajan*, and in turn surrendering effective control to the lender, have fishing communities maintained even a nominal title to access rights.

As a result, although the NFMP was intended to return some measure of control over the fisheries to traditional fishermen, in practice the system has been coopted by the same influential people that have always controlled the *jalmahal*. Circumventing the intentions of the NFMP is a relatively simple matter. A *mahajan* or wealthy investor simply needs to submit a tender offer for the lease in the name of a fishermen's cooperative society (FCS). The introduction of competitive auctions for leases has effectively opened the system to these wealthier leaseholders and has resulted in a dramatic rise in the value of leases. Since the fishermen are unable to afford a lease, they have no alternative but to accept the patronage of such a person in order to work.

The investors in the region's fisheries are often outsiders—individuals or consortiums with limited fisheries knowledge who have been attracted by the potential for high returns. Many have come from the growing urban middle class, or even from migrant families with family members abroad looking for businesses to invest in "back home". Often these people have the political and institutional contacts necessary to ensure that leases are awarded to them or

4 The number of bodies under NFMP was later reduced to 26 by the *Jalmahal* Management Committee.

to *samity* (cooperative societies) over which they have control. They may also be able to arrange a lease through influential contacts in fisheries areas.

In Sunamganj it was reportedly common for wealthy leaseholders to submit multiple tender offers under several different FCS names. Since they can maintain relationships and memberships in more than one *samity*, this is entirely legal. The system is also distorted in other ways, notably by using political influence to take possession of a lease via the Ministry of Land. When more than one person attempts to subvert the system in this way, often through different channels, it generally results in court cases that can end up leaving the fishery unleased for a period.

Another circumstance under which no lease is issued is when bidders form cartel agreements. When this occurs, no tenders are submitted by agreement among the available bidders. This is done with the intention of forcing the lease price down. If the price does not drop, the water body goes unleased (but is usually exploited anyway). If the price declines to the satisfaction of the cartel, one member will bid on the lease, take possession of it and share the profits with the other members.

Leases for smaller water bodies (under 20 acres) are handled by the *thana* Nirbahi Office and subject to official corruption that can deprive the government of revenues. While these fisheries are being harvested, no official lease is issued and no fee paid to the government. Instead, the local official suggests that potential bidders submit no bids. Then, once all the deadlines for bids have passed, the official shows the *jalmahal* as unleased. Then, presumably through some competitive bidding of his own, he arranges for a bidder to take control of the water body, harvest it and pay him a share of the profits.

2.2 The Management of *Jalmahal* Leasing

The administrative management of *jalmahal* leasing consists of all the steps taken to auction, process and issue a lease. The *jalmahal* Management Committee is the mechanism through which this is accomplished. These committees operate at four levels of government: union, *thana*, district and ministry. Each level is responsible for water bodies of certain sizes. The union leases out *jalmahal* of less than three acres; the *thana* deals with those that are between 3 and 20 acres; and the district is responsible for fisheries of 20 acres or more. The ministry level handles *jalmahal* that are in dispute and have been referred to it by the lower levels of administration.

22

Fisheries generally are leased out for periods of one or three years, although the ministry sometimes leases them for longer periods. Such leases usually require that development work be done on the fishery. The criterion for whether a *jalmahal* is leased for one year or three is its permanence. *Jalmahal* that dry up between the months of *Falgoon* and *Baishak* (February-May) are leased for one year, those that do not dry up are leased for three years.

Whatever the length of the lease, the procedure for obtaining the fishing rights is the same, a tender offer must be submitted to the appropriate authority. Fishermen's cooperatives have been given preference in this procedure since implementation of the National Waterbody Policy (NWP) in 1979. To meet this requirement the local Land Revenue Administration usually announces its request for tenders either by drum beating, arranging a public meeting with village cooperative societies or circulating leaflets at local markets and other gathering places. As previously noted, however, it is relatively easy for a wealthy individual to gain the use of an FSC's name in order to bid for a lease.

Jalmahal on the one-year cycle are frequently leased just before harvest, between *Augrahayan* and *Poush* (November to January). This is often because potential bidders are unavailable at the time when the tender papers are sold (particularly in *Baishak* (April-May), when many of them would be busy with the final phase of fishing). It also occurs, as noted above, because of various forms of official corruption.

2.3 Leaseholder Management of the Fishery

While administrative management decides the fate of a *jalmahal* lease, it is the leaseholder or the FCS in whose name the lease is held that is responsible for the survival of the fishery. Actions taken to make a water body productive and profitable are not only to the leaseholder's benefit but also ultimately affect the amount of revenue the government can command for the lease. When such measures are taken responsibly, the health of the fishery is also assured.

The earning potential of a *jalmahal* is not the only factor determining the leaseholder's willingness to make a sizeable investment in the fishery. The terms of the lease and the prospects for renewal also play a part in this decision. Under a short lease, or if the leaseholder thinks he is unlikely to win the lease for a second period, he is less likely to put any money into fishery development. Delays in issuing leases, whether legitimate or due to corruption, can also affect leaseholder management by reducing the amount of time he has

to carry out any productivity measures. Obviously, the ultimate calamity is a water body on a one-year lease cycle, the lease for which is issued immediately before the fishing season. Under these circumstances the leaseholder has neither time to make any effective investment in the fishery nor the inclination to take more than a passing interest in its future survival.

The 10 case studies that follow each describe a fishery in the North East Region, its leasing history and its leaseholder's management of the fishery. They also detail the maintenance costs incurred during the most recent lease period and, where possible, quantify the benefits accruing from the *beel*.

CASE STUDY: PATASINGA *BEEL*

3.1 Description of the *Beel*

Name: Although locally known as Pata *beel*, the Moulvibazar ADC(R) office records give its name as Katasinga *beel*. The FAP 17 fisheries team recorded its name as Patasinga *beel*.

Location: Patasinga *beel* is in Kawadighi *haor* under the administration of Kawadighi *mauza* of Moulvibazar Sadar *thana*. It is about 15 km north east of Moulvibazar town in an area protected by the Manu Irrigation Project (MIP). Several natural canals link Patasinga *beel* with other *beel*, and several irrigation canals connect it to the Manu River. The various tributaries and distributaries running through the area are locally known as *gang*. Among the more important of these are Las *gang*, Khara *gang*, Isodala *gang*, Magur *gang* and Narkhoya *gang*.

Area: According to ADC(R) records, the area of the *beel* is about 577.47 acres. The leaseholder, however, reports that it is only about 230 acres. Siltation, he says, has filled the remaining 347 acres and they have been converted into crop land.

The Lessee: Over the past 11 years, the records show, the *beel* has been leased by four individuals. The most recent of these lives in Moulvibazar town about 18 km from the *beel*. Although this man's name appears in the records, his brother-in-law is the true lessee. According to this "shadow lessee", he has been behind all the leaseholders over the period for which records were obtained, except the period from 1983-86[5].

The shadow lessee also says he has been in the fisheries business as a *jalmahal* leaseholder since the Independence of Bangladesh, and his father was in the business before that. The lessee is a rich man and has been active in local politics. He seldom visits the *beel* himself, leaving its direct management to his partner, the legal leaseholder, and a manager, both of whom have considerable experience in *beel* fishing. Once the fishing starts, these two men remain at the *beel* site full-time. The manager once had a *jalmahal* of his own

[5] The leases discussed in this report start with the beginning of the Bangla year in mid-March.

that he had inherited from his father. His father had purchased it as part of a *zamindari* estate. The manager lost his *jalmahal* when the government set the maximum land ownership ceiling at 375 *bigha* (see Appendix).

3.2 Leasing of the *Beel*

The ADC(R) of Moulvibazar manages leasing of this *beel*, having assumed the responsibility in 1984, when greater Sylhet was divided into several smaller districts. Before that time the leasing was managed by the Sylhet ADC(R).

Upon being given the leasing responsibility, the Moulvibazar ADC(R) leased the *beel* to a fishermens' cooperative for the three-year period from 1984 to 1987. In fact, the Sylhet ADC(R) had already issued a lease on the fishery to someone else for three years from 1983 to 1986. This leaseholder appealed to the Land Ministry to resolve the problem; the ministry then cancelled the lease issued by the Moulvibazar office on the condition that the fishermen's cooperative be given preference in bidding for the next lease.

The most recent lessee is the only one to hold the lease for two consecutive periods since 1983. Since he had paid such a large sum (Tk.226,000) for the first one-year lease (1992-93) he was particularly interested in extending his interest in the fishery. To do so, he says, he paid an ADC(R) official Tk.130,000 to assist him. The official suggested that he submit a development scheme for the *beel*, which would assure him of a longer lease. Given these prospects, the man invested in *katha* for the *beel* and hired guards to protect the fishery. In January 1993 he learned that to get his requested longer lease he would have to pay Tk.575,000 for the first year and 10% more for the second year. By that time, however, the leaseholder had already invested a considerable amount of money in the *beel* and had even completed preparations for catching fish. Since it was too late to call back his investment, he appealed to the government for compensation, pointing out that, had he known how much the lease would cost, he would not have been interested in another lease.

The lease for 1993-94 cost the leaseholder more than twice the amount he paid for 1992-93. According to the existing rules, each new lease should cost at least 25% more than the previous lease. The records of the ADC(R) show that, in this case, the office had used 1991-92 as the base year rather than 1992-93. The rationale for this, according to the ADC(R) is that the leaseholder had applied for a two-year extension starting in 1993-94, which constituted a continuation of his 1992-93 lease. He therefore was charged 25% above the cost

of the lease in 1991-92. The lessee finds this argument questionable, but it should be pointed out that his 1992-93 lease cost less than half the amount paid the previous year.

Patasinga *beel* was on a three-year leasing cycle until 1992-93 (Table 3.1), when the current leaseholder assumed control. With the singular exception of the one-year lease for 1992-93, there has been an overall trend toward increasing revenues from the *beel* that is well above the required 25%. This would indicate that the fishery is profitable and that there is competition for the rights to the *beel*. The 50.8% drop in revenue for 1992-93, however, suggests that leaseholders are less secure about the profit potential of a short-term lease.

Table 3.1 Revenue earned from Patasinga *beel*, 1983-94

Lease Year(s)	Lease Length (years)	Lease Type	Revenue Earned (Tk./yr.)	Increase/ Decrease (%)
1983-86	3	Renewable	150,000	-
1986-89	3	Renewable	375,000	150
1989-92	3	Renewable	460,000	22.7
1992-93	1	Non-renewable	226,000	-50.8
1993-95	2	Renewable at 10% enhanced rate	575,000	154.4

3.3 Development and Conservation

Since the current leaseholder was uncertain that he would receive the lease for a second period, he did no development work on the *beel* during his first year (1992-93). At the time this study interviewed him he also had not undertaken any development measures in the second year. The conservation measures he took consisted of the hiring of guards and placement of *katha*. In both years the lessee hired 14 guards to patrol the *beel* in boats from *Bhadra* to *Magh* (August-February). He also placed bamboo and *katha* made of *jarul, hizal* and *shawra* tree branches in the *beel*.

3.4 Fishing and Marketing

Fish are harvested annually from Poush to Magh (December to February). The leaseholder hires fishermen on a catch-share basis. According to the leaseholder, the fishermen's share starts at 25% in *Poush* and increases as the fish stock declines. The fishermen say they

received only a 10% share and, as will be seen, the fishermen actually only received a 14% share overall.

The fishermen themselves provided the gear used for the harvest, which consisted of nets (*ber jal, current jal, fashi jal, bel jal, chabi jal, ghori jal, thella jal, jhaki jal*) and traps (*polo, chata, darki, doiar* and *chai*).

The lessee and manager set up a sales centre on one side of the *beel*. Catches were brought to this centre and sold to *bepari* through open auction. No fish processing was carried out at the centre. Payments for fish purchased were sometimes deferred until the following day, when the *bepari* would return to purchase more fish. The manager maintained the sales records.

3.5 Management Problems

- Flood control embankments prevented fish moving between rivers and floodplain and reduced fish catches inside the Manu project.
- Irrigation water from the Manu project entered the *beel* during the peak fishing period hampering fishing efforts.
- Siltation following the construction of the Manu River embankment has reduced the area of the *beel* about 60%, creating an unfavourable environment for fish conservation.
- The short leasing period dissuaded the lessee from investing in improvements that might have increased production.

3.6 Steps Taken to Solve Problems

- The appropriate officials were notified about the intrusions of irrigation water and siltation problem.
- To prevent unauthorized fishing, the lessee assigned guards to the *beel* prior to actually receiving rights to the fishery. The leaseholder took this risk only after official assurances that he would get the lease.

3.7 Costs of the *Beel*

The leaseholder's costs for the 1993-94 lease year are shown in Table 3.2. The largest percentage (51%) went for the lease itself, followed by the fishermen's shares (18%). The

bribe reportedly paid to an official to extend his lease cost a full 11% of the total. The leaseholder justified this expense on the grounds that the longer lease would allow him to save some money on other management costs, such as boats, *katha* and bamboo.

Table 3.2 Costs incurred on Patasinga *beel*, 1993-94

Cost Item	Amount (Tk.)	% of Total*
Leasing cost	575,000	51
Other administrative costs (bribe)	130,000	11
Guards	10,000	1
Katha/bamboo, including labour	40,000	4
Boats for guards	11,500	1
Other establishment costs during fishing	20,000	2
Interest on operating costs @ 10%	73,250	6
Fishermen's shares	198,853	18
Manager's compensation	75,000	7
Total	**1,133,603**	**100**

* Total may not equal 100 due to rounding.

3.8 Benefits from the *Beel*

Table 3.3 shows the benefits the lessee reported getting from Patasinga *beel*. His total benefit was Tk.1.37 million, about Tk.1 million of which was income from the direct sale of fish. The only other income came from the rental of a portion of the *beel* for lift net fishing, from which he earned Tk.35,000. All other benefit was in the form of non-cash distributions of fish to various parties.

Table 3.3 Gross benefit from Patasinga *beel*, 1993-94

	Amount (Tk.)	% of Total*
Direct sale of fish	997,525	73
Value of fish taken by lessee	150,000	11
Value of fish consumed by fishermen	99,100	7
Value of fish given to relatives	11,000	1
Value of fish taken by managers	75,000	5
Rental of lift net site	35,000	3
Total	**1,367,625**	**100**

* Total may not equal 100 due to rounding.

3.9 Distribution of Benefits

The distribution of the *beel*'s benefits provides insights into its management. Table 3.4 summarizes the disposition of the benefits from Patasinga *beel* in 1993-94. The cost of leasing the *beel*, between the price of the lease itself and the sizeable bribe, consumed a full 52% of the benefits. The high share of the benefit going to the government (42%) is working against existing land tenancy policy. Under the prevailing system the landowner (in this case, the lessee) should receive a maximum of 50% of the benefit, provided he bears 50% of the total cost. If he pays less than 50% of the cost he should receive 33% of the output. In other words, under any circumstances the lease cost should not exceed 33% of the total benefit. In this case, as the table shows, the leaseholder received only 17% of the total.

Table 3.4 Distribution of benefits from Patasinga *beel*, 1993-94

	Amount (Tk.)	% of Total*
Capital costs		
Leasing	575,000	42
Other administrative	130,000	10
Input costs		
Katha/bamboo/labour	40,000	3
Guards and boats for guards	21,500	2
Fishing costs		
Fishermen's fish and shares	198,853	14
Manager's compensation	75,000	5
Other establishment costs	20,000	2
Costs of capital invested	73,250	5
Residual/net profit	234,022	17
Total	**1,367,625**	**100**

* Total may not equal 100 due to rounding.

The table also shows that the benefits accruing to the fishermen working in this *beel* were 14% of the total. This share may seem high, but as Section 3.11 will show, if it is converted into a daily wage rate it is barely enough for subsistence. While the leaseholder largely sets the share going to the fishermen based on his potential earnings from the *beel*, their shares also depend on such factors as total fish stock, daily catch rate, prevailing wage rate and the skill of the fishermen.

3.10 Fishing Units

The fishermen working in the *beel* were drawn from the households of nearby fishing villages. A fishing unit consisted of one to 10 fishermen, depending upon the type and size of the gear used. The smallest possible unit is a single fisherman with a small gill net and boat. More common on Patasinga *beel* was a two-man unit operating one to three gill nets at a time. The largest fishing units, consisting of five to 10 fishermen, operated *ber jal*. Table 3.5 shows the minimum and maximum number of fishermen used to operate each type of gear.

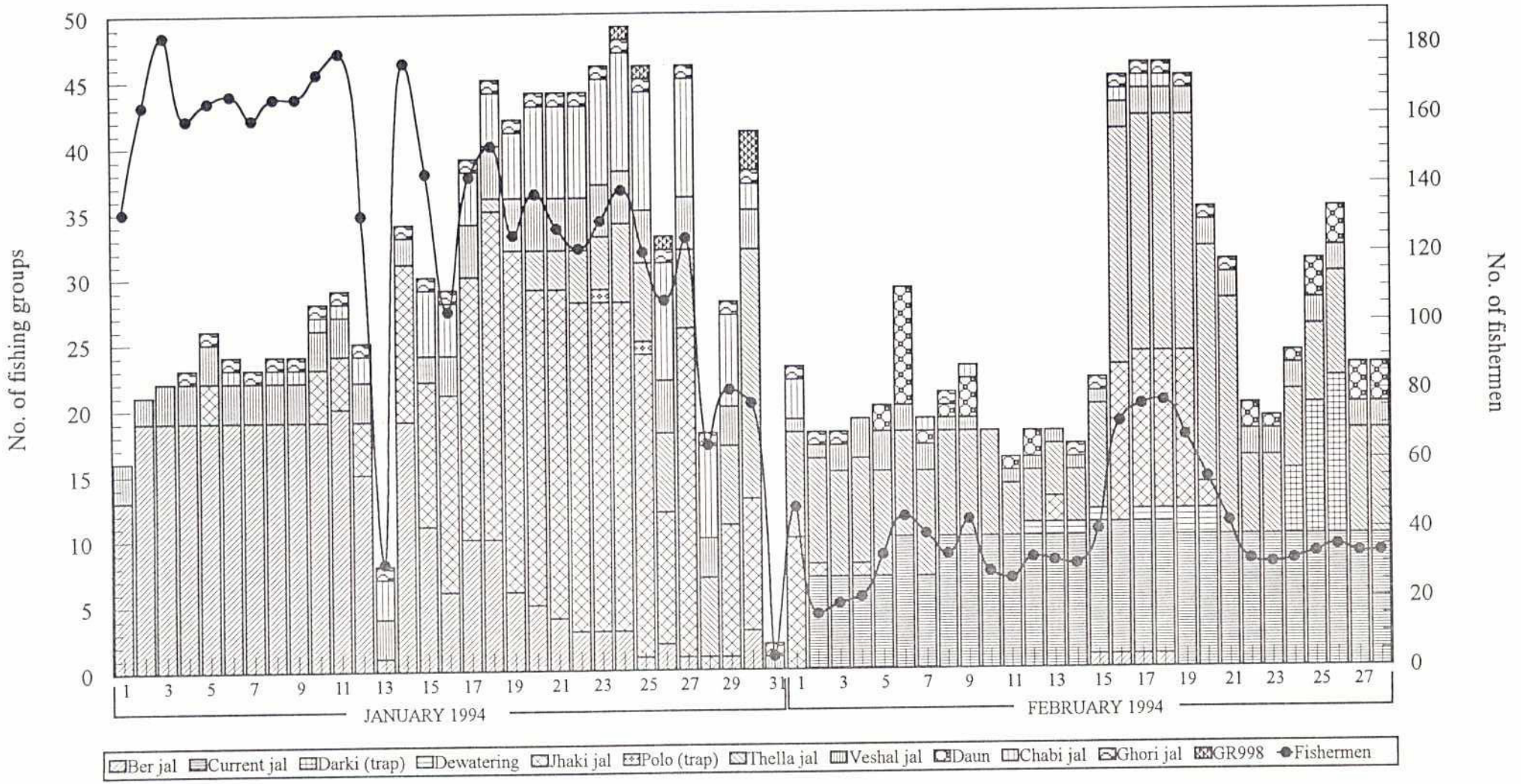
Table 3.5 Number of fishermen per gear unit in Patasinga *beel*, January and February 1994

Gear	Gear used (no./day)		Fishermen (no./gear)	
	Min.	Max.	Min.	Max.
Berjal (seine net)	1	19	5	10
Current *jal* (gill net)	20	25	1	2
Darki/Doiar/Chai (traps)	10	12	1	2
Koi/Fashi jal (gill nets)	14	29	1	2
Ural/Jhaki/Rock *jal* (cast nets)	3	26	2	2
Polo (trap)	1	1	1	1
Fallon/Thella jal (push nets)	1	19	1	1
Bel jal/Veshal jal (lift nets)	1	4	1	2
Daun (hook and line)	1	3	1	2
Gota/Chabi jal (seine nets)	1	9	6	7
Ghori jal (bag net)	1	1	2	2

A single unit of *polo* (trap) was used for two days in January (January 23 and January 25). The sole unit of *ghori jal* was in use constantly from January 4 to February 21. The use of other gears varied over the whole period as shown in Figure 3.1. The most variation occurred with *ber jal, thella jal, jhaki jal* and current *jal*.

Figure 3.1 also shows the number of fishing groups and total number of fishermen working daily in the *beel*. A total of 360 fishermen worked in 95 fishing groups, but not all groups operated at the same time. The minimum number of units operating in a single day was two and the maximum was eight.

Figure 3.1 Number of fishing groups, types of gear used and total fishermen in Patasinga *beel*, January and February 1994



Each fishing group had a leader who managed negotiations for the unit. Before negotiating with the leaseholder, the group would discuss their expectations about their share of the catch. Using this information the head fisherman would then make a verbal contract with the leaseholder and communicate the results of his negotiation to the other team members. He would also discuss with them any major decisions that needed to be made, such as the purchase or repair of gear.

The only gear owned by the leaseholder was the *ghori jal*, which was operated by his own salaried fishermen. Contract fishermen provided their own gear either from their existing stock of equipment or by purchasing it or hiring it from someone else. In some fishing groups the members had equal shares in the gear, while in others the gear was provided by one or more of its members in differing proportions. When group members had equal shares of the gear the head fisherman would facilitate discussions about the maintenance of the gear, and all fishermen shared equally in the catch. In teams where the gear was disproportionately owned, the owners would receive a higher share of the catch as "rent". The poorest fishing groups usually lacked the money to buy gear and would have to hire it from someone else, paying them cash or a percentage of their catch (ranging from one-eighth to one-quarter) for its use.

3.11 The Fishermen's Share

Competition to be among the fishermen working in this *beel* was strong, so the leaseholder had an opportunity to select the fishing groups with the best past performance. In the negotiations to set the fishermen's share, the leaseholder established several regulations. These were:

1. Fishing groups were not allowed to leave the *beel* until fishing was completed.
2. If the fishermen felt their share was too low they could discuss it with the leaseholder.
3. All fishing group expenses were to be borne by the group.

The leaseholder initially agreed to pay the fishermen 10% of the catch plus fish to eat. At the end of January the fishermen negotiated a higher share because catches had declined. Although the leaseholder reportedly agreed to pay a higher rate, he did not do so. Instead, he increased the amount of fish he gave the fishermen for consumption, but this was still less than they had been getting earlier in the season. The fishermen therefore stopped fishing in protest on January 31. Figure 3.1 shows that only two fishing groups operated on that day. Of these, one was the leaseholder's own fishermen, who were operating the *ghori jal*; the

other was a team operating a *bel jal* used for *katha* fishing. The other fishermen returned to the *beel* when the leaseholder agreed to increase their share.

Although the fishermen received 14% of the total catch (Table 3.4), this represents a very small amount of income on an individual basis. Table 3.6 shows that the daily income received by a single fisherman ranged from Tk.18 to Tk.89 and averaged Tk.39 over the two-month period. Daily earnings exceeded the prevailing national wage rate of Tk.50 on only eight occasions. The two days with the highest daily rates were days when *katha* were operating. The teams working on these days, January 13 (Tk.406) and January 31 (Tk.382), were made up of lead fishermen from a number of fishing groups. These fishermen shared their earnings with the members of their regular fishing group, so on those days the earnings averaged much less per person: Tk.95 on January 13 and Tk.20 on January 31. Because of their low daily wages, the fishermen had difficulty providing form their families and were indebted to the shops where they purchased daily necessities.

Table 3.6 Fishermen's daily incomes from Patasinga *beel*, January and February 1994 (Tk.)

Date	Total Sale	Fishermen's Share @ 10%	Value of Fish for Consumption	Total	Fishermen Operating	Tk./day
January 1	54575	5458	3500	8958	133	67
January 2	51890	5189	3500	8689	164	53
January 3	65325	6533	4000	10533	184	57
January 4	54925	5493	3000	8493	160	53
January 5	47775	4778	3000	7778	165	47
January 6	36790	3679	3000	6679	167	40
January 7	33140	3314	3000	6314	160	39
January 8	22990	2299	3000	5299	166	32
January 9	21350	2135	3500	5635	166	34
January 10	20895	2090	3500	5590	173	32
January 11	25180	2518	3500	6018	179	34
January 12	87465	8747	3000	11747	132	89
January 13	95770	9577	3000	12577	31	406
January 14	6150	615	3000	3615	176	21
January 15	38015	3802	3000	6802	144	47
January 16	21015	2102	3000	5102	104	49
January 17	26855	2686	2500	5186	143	36
January 18	19215	1922	2500	4422	152	29
January 19	16025	1603	2500	4103	126	33
January 20	18590	1859	2000	3859	138	28
January 21	13865	1387	2000	3387	128	26
January 22	17930	1793	2500	4293	122	35
January 23	15920	1592	2500	4092	130	31
January 24	18390	1839	2500	4339	139	31
January 25	20605	2061	3000	5061	121	42
January 26	13905	1391	3000	4391	107	41
January 27	5375	538	2000	2538	125	20
January 28	4840	484	1500	1984	65	31
January 29	7375	738	1500	2238	81	28
January 30	7490	749	1000	1749	77	23
January 31	5280	528	1000	1528	4	382

(Continued)

Table 3.6 Fishermen's daily incomes from Patasinga *beel*, January and February 1994 (Tk.)

Date	Total Sale	Fishermen's Share @ 10%	Value of Fish for Consumption	Total	Fishermen Operating	Tk./day
February 1	3540	354	500	854	47	18
February 2	3250	325	500	825	16	52
February 3	2540	254	450	704	19	37
February 4	2810	281	450	731	21	35
February 5	3150	315	500	815	33	25
February 6	4230	423	600	1023	44	23
February 7	2890	289	500	789	39	20
February 8	2250	225	500	725	33	22
February 9	2580	258	500	758	43	18
February 10	4190	419	700	1119	28	40
February 11	4280	428	700	1128	26	43
February 12	3640	364	600	964	32	30
February 13	2845	285	500	785	31	25
February 14	3165	317	500	817	30	27
February 15	4370	437	600	1037	40	26
February 16	6845	685	700	1385	71	20
February 17	6950	695	800	1495	76	20
February 18	6130	613	800	1413	77	18
February 19	5640	564	700	1264	67	19
February 20	5135	514	700	1214	55	22
February 21	3845	385	500	885	42	21
February 22	2310	231	500	731	31	24
February 23	1545	155	400	555	30	18
February 24	1830	183	400	583	31	19
February 25	2640	264	500	764	33	23
February 26	2985	299	500	799	35	23
February 27	3085	309	500	809	33	25
February 28	3945	395	500	895	33	27
January total	894910	89491	83500	172991	4062	43
February total	102615	10262	15600	25862	1096	24
Grand total	**997525**	**99753**	**99100**	**198853**	**5158**	**39**

CASE STUDY: NAGUA-DHOLIA GROUP FISHERY

4.1 Description of the *Beel*

Name: Nagua *beel* and Dholia *beel* are separate water bodies, but they are leased together under the name Nagua-Dholia Group Fishery. Dholia *beel* is sometimes known as Dulla *beel*.

Location: The *jalmahal* is located in Hakaluki *haor*, Chatla *mauza*, Moulvibazar Sadar *thana*. It is in an area unprotected by flood control 35 km north east of Moulvibazar town and 6 km west of Shadipur village.

Area: The register at the Moulvibazar ADC(R) shows that the area of the *jalmahal* is about 605.70 acres, but the lessee claims that the current area is much less.

The Lessee: The leaseholder claims that his major occupation is agriculture, but other villagers refer to him as a *maimul* and he is president of a local fishermen's cooperative. He also is active in local politics. He knows the names of most of the fisheries leaseholders of Sylhet, Sunamganj, Fenchuganj, Barlekha, Kulaura and Moulvibazar. This is in part because of his political activities, but it is also because he feels a need to develop and maintain connections with others who lease Hakaluki *haor* fisheries in his capacity as president of a fishermen's cooperative. All the fishermen of his village are members of the *samity* that he heads.

4.2 Management of the *Beel*

4.2.1 Leasing

The Moulvibazar ADC(R) manages the leasing of the Nagua-Dholia Group Fishery. In 1986, when the fishery was placed under the New Fisheries Management Policy (NFMP), the *beel*'s lease was in dispute. The Moulvibazar ADC(R), to protect government revenue from the water body, issued an order restraining a man claiming rights to the *beel* from fishing in it until further notice. To continue his operations in 1988-89, the man agreed to pay a 10% increase over the price paid by the previous lessee. He therefore resumed fishing and local fishermen's groups, at the instigation of a local leader, filed a case against him. The original restraining order was legally still in effect, but in 1989-90 the ADC(R) told him he could continue exercising his fishing rights, but only by paying Tk.264,000 to do so—25% above the last price he had paid. When he continued his fishing operation, the fishermen's groups filed a case against him in the High Court. As a result, nobody had the right to catch fish from the *beel*. The case continued until the

beginning of 1994, when the man who had handled the case for the fishermen's groups, acquired the holding rights to the *beel* in the name of a fishermen's cooperative.

The lease period for Nagua-Dholia, like that of other *beel* has varied over time, ranging from one to six years, and only one lessee has held consecutive leases.

The government revenue earned from this fishery, in part due to the dispute described above, showed an upward trend (Table 4.1). The willingness to pay these rates, however, suggests that fishing in this *beel* is profitable (but see Section 4.3).

Table 4.1 Revenue earned from Nagua-Dholia group fish

Lease Year(s)	Lease Length (years)	Lease Type	Revenue Earned (Tk./yr.)	Increase/ Decrease (%)
1982-88	6	Renewable	192,000	-
1989-90*	1	Non-renewable	211,200	10
1990-93	3	Renewable	264,000	25
1993-96	3	Renewable at 10% enhanced rate	290,400	10

* No contract was issued for 1988-89.

4.2.2 Development and conservation

The current lease was not issued under a development scheme, and no development work has been done in the *beel*. According to the leaseholder he has not had enough time to do any development work, or even undertake any fish conservation activities, since receiving the lease.

4.2.3 Fishing and marketing

Fishing started as soon as the lease was issued in *Magh*, by which time fishing should already have started. Members of the fishermen's cooperative in whose name the lease is held were employed to do the work on catch-share basis. The cooperative has 112 members, all from the same village. Their share initially was 10% of the catch, but their portion subsequently increased to 15%, 25% and 50% as the remaining stock declined. The fishermen used their own gear, including *ber jal, bel jal, kona jal, thella jal, jhaki jal* and *pan jal*, and also provided their own boats. They constructed their own *khola* at the *beel* site; the lessee also built a house nearby for himself and his companions. A landing place near the

lessee's house was used as a fish market where all the fish were sold to *bepari* in open auction. The fish were sometimes graded according to size and/or species. A record was kept of the catch sales for each fishing party.

4.2.4 Management problems

- Untimely leasing resulted in poor management for fish conservation; this led to a sizeable loss of production for the lessee.
- Siltation is affecting both *beel* in the fishery and people living around the *beel* are cultivating the margins of the water bodies.

4.3 Costs and Earnings

Few investments were made in physical improvement to the *beel* because fishing started immediately after the lease was issued. The costs itemized by the lessee and shown in Table 4.2 were: the cost of the lease, court and legal fees, salaries for 18 guards hired for one month, and the hire of boats. Despite the detailed accounts available the lessee was unwilling to provide any data on earnings.

The leaseholder claimed that he would lose about 50% of his investment for 1993-94, the first year of his lease. He attributed this to the delay in issuing the lease to the *beel.* Despite his projected loss, he is nonetheless interested in obtaining a lease on the *beel* for two more years.

Table 4.2 Costs incurred on the Nagua-Dholia group fishery, 1993-94

Cost Item	Amount (Tk.)	% of Total*
Leasing cost	290,400	50
Court/*ukil* fees & conveyance	250,000	43
Salary for guards	21,600	4
Food for guards	10,600	2
Boat rental	4,200	1
Total	**576,800**	**100**

* Total may not equal 100 due to rounding.

4.4 Comments of Lessee

- Leases should be given to interested local parties. If the lessee is an outsider, then the fishermen too will be outsiders. When this happens, local fishermen are deprived of their livelihood.
- Fishing leases should be issued in a timely manner.
- Long-term leases coupled with sufficient bank loans provided to the fishing community would raise incomes among the rural poor.

CASE STUDY: TEKUNI GROUP FISHERY

5.1 Description of the *Beel*

Name: Tekuni *beel*, the name of which is derived from its triangular shape, is a group fishery.

Location: The *beel* is in the northern part of Hakaluki *haor* under Barlekha *thana* about 10 km east of Fenchuganj *thana* and 40 km north east of Moulvibazar town. It is unprotected by flood control and fed by the Juri River from the north west, the Kairgang from north east and Momenchara *khal* from south.

Area: The total area of the water body is 80.48 acres, siltation having reduced its size considerably over the years. In 1964-65, five-acre plots of cultivable land surrounding the *beel* were distributed to 60 landless households from Sattish. In a second wave of land settlement in 1967, 150 families were each given three acres of land. A third land distribution was made in 1984, when 100 families were each provided with 1.5 acres of land.

The Lessee: The present lessee of the *beel* is both a farmer and a *maimul* because of his involvement in fishing. He is an officer of a fishermen's cooperative society.

5.2 Management of the *Beel*

5.2.1 Leasing

Like the other *beel* in Hakaluki *haor*, the leasing of the Tekuni Group Fishery is managed by the Moulvibazar ADC(R). Since 1983-84 the fishery has usually been leased by fishermens' cooperatives. The *beel* was leased out for three-year periods until 1991-92 when it became a one-year lease. The present lessee says that he would prefer a long-term lease, but the ADC(R) official does not. According to the lessee, short-term leasing is destroying the *beel* by not providing adequate incentive to invest in its improvement. As a result, siltation is continuing unabated and fish production is declining. The lessee says he will lose about Tk.20,000 on the fishery under his current lease. If he decides to participate in the next tender for the lease, he will be unwilling to pay as much for the fishing rights.

In explaining how long-term leasing would benefit both the lessee and the government, the leaseholder points out that *rui*, *catla* and *mrigel* spawn when they are two and a half years old, *boal* at age two and *chital* at age three. He maintains that the *beel*, therefore, cannot be productive under a one-year lease. Under a longer leasing period the leaseholder would be able to practice *katha* fishing, creating an environment suitable not only for sustaining these fish but also for encouraging their reproduction. He also pointed out that a year-old *rui* weighing about 1 kilogram sells for about Tk.60, while a three-year-old weighing 10 kilograms will bring in about Tk.1,200. Moreover, after two and a half years the same *rui* will spawn thousands more. A leaseholder enjoying this much higher rate of production, the lessee says, would be encouraged to pay more to the government for the lease.

The data in Table 5.1 show that the revenue earned by the government under the succession of three-year leases was increasing, while revenues have declined since the one-year lease system went into effect.

Table 5.1 Revenue earned from Tekuni *beel*, 1983-1994

Lease Year(s)	Lease Length (years)	Lease Type	Revenue Earned (Tk./yr.)	Increase/Decrease (%)
1983-86	3	Renewable	24,500	-
1986-89	3	Renewable	31,000	26.5
1989-92	3	Renewable	40,600	30.9
1992-93	1	Non-renewable	40,750	0.4
1993-94	1	Non-renewable	30,000	-26.4

Only one lessee has held the lease more than once over the period (the leases covering 1989-1993). The current leaseholder, interestingly, is the brother of this man and learned from him that the one-year lease was a poor proposition. Armed with this knowledge, the tender he submitted was 26.4% lower than that which his brother paid the previous year.

5.2.2 Development and conservation

Since the lessee has only a one-year lease and is unsure about taking the lease for a second period, he has done nothing to develop the *beel* resources. He did construct an inexpensive embankment where the *beel* meets Soljur *khal* in order to make fishing more convenient. The

lessee also has installed 200 *bana/katha*, covering an area about 3,600 feet long, at the entry point of Juri *nadi* to keep fish from leaving the *beel* during harvest and heavy rains. He hired six guards for four months starting in *Kartik* (October/November) and three additional guards for the month of *Falgoon* (February/March). He also provided the guards with two boats.

5.2.3 Fishing and marketing

Fishing started in *Magh* (January/February). Fishermen were hired on a catch-share basis that started with a 25% share. As in other *beel*, the share increased, in this case to 37% and 50%, as the fish stock decreased. As of February 11, the lessee had paid fishermen a total of about Tk.20,000 as their share. The fishermen provided their own nets and boats. The leaseholder established a *khola* on the western side of the *beel* and the fishermen constructed their own houses. The lessee also built a house for himself and his helpers on the site.

The fishermen worked in groups of five to eight, the size of the group depending upon the gear used. *Ber jal, pan jal, jhaki jal,* and *thella jal* were among the nets deployed on the *beel*. Once a group had caught enough fish they brought them to the landing place near the *khola*, where the lessee or his designated representative sold them in open auction in the presence of the fishing party. A record of each sale was kept and, daily, weekly or on demand, the fishing party was given its share. The lessee reported that the catch was primarily small *chingri* and that big fish like *rui, catla,* and *mrigel* were rare.

5.2.4 Management problems

- Heavy rainfall runoff from the nearby hills carries mud and silt into the *beel*.
- The use of current *jal* hinders fish reproduction.
- Fishermen and villagers living around the *beel* freely catch fish during inundation, reducing the potential catch from the *beel*.

5.2.5 Steps taken to solve problems

- The leaseholder constructed a small embankment where the *khal* and *nadi* join the *beel*.
- To keep fish from leaving the *beel* during harvest or heavy rain, the lessee put *bana* at the connecting edge of *Juri nadi*.
- Guards were hired to prevent illegal fishing in the *beel*.

5.3 Costs and Earnings

The cost data provided by the lessee and shown in Table 5.2 included costs for the lease, construction of *bana*, guards, boats, *katha* and bamboo. Costs associated with guarding this fishery (salaries and boats) made up the largest portion of the leaseholder's costs.

Table 5.2 Costs incurred on Tekuni *beel*, 1993-94

Cost Item	Amount (Tk.)	% of Total*
Leasing cost	30,000	31
Cost of *bana*	10,000	10
Bamboo & *katha*† including labour	20,000	21
Guards	32,400	34
Boats for guards	3,000	3
Total	**95,400**	**100**

* Total may not equal 100 due to rounding.
† 500 *katha* branches @ Tk.20 each, 500 bamboo @ Tk.10 each and Tk.5,000 for labour.

5.4 Comments of Lessee

- Long-term leasing would minimize management costs and, in this case the lessee said he would be willing to pay a higher fee for the lease.
- Increases in lease cost of 10% to 25% are unrealistic, the lessee said that the open auction system of the past checked official corruption better than the closed tender system.
- Fishing should be restricted to three-year intervals to help increase fish production.
- Providing credit to fishermen's societies would help reduce fishermen's dependency on moneylenders.

CASE STUDY: CHATLA *BEEL*

6.1 Description of the *Beel*

Name: The water body is both locally and officially known as Chatla *beel*.

Location: Chatla *beel* is south east of the centre of Hakaluki *haor* under Kulaura *thana*, Moulvibazar district. It is about 32 km north east of Moulvibazar town and 4 km west of Shadipur village. It is not subject to flood control.

Area: ADC(R) records indicate that the area of the *beel* is 518 acres, but the lessee says siltation has reduced the *beel*'s area by 20%.

The Lessee: The current lessee, lives in a village about 35 km north of the *beel*. He has been secretary of a fishermen's cooperative since 1982-83. While he and the cooperative are the *jalmahal*'s official lessees, another man actually finances the operations of both the fishery and the cooperative. The financier is not directly involved in harvesting fish from the *beel* and neither he nor the official lessee are fishermen by profession. The *jalmahal* is just one of their business enterprises. The information in this case study was provided by the financier.

6.2 Management of the *Beel*

6.2.1 Leasing

The Moulvibazar ADC(R) office, which manages the leasing of Chatla *beel* (although the records indicate that it had usually been leased out by the Ministry of Fisheries and Livestock), provided leasing information about the water body from 1982-83 to the present. Leasing of the *beel* prior to 1982-83 was managed by the Sylhet ADC(R) office.

When Moulvibazar became a district, Chatla *beel* had been leased by the Department of Fisheries to a fishermen's cooperative for six years (1982-1988). At that time the current lessee was secretary of the cooperative. According to the financier, he had been given the lease to the *beel* on the recommendation of a highly influential politician in central government. Sometime after the lease had been awarded to the cooperative, another cooperative applied to the Ministry for rights to the fishery, claiming that its members were local fishermen. The Ministry denied the application on the grounds that the *beel* was already under a lease. In 1984, when the leasing cooperative started fishing for the first time, a third cooperative used its influence in the Land Ministry to gain control of the lease. The leasing cooperative thereupon filed and won a writ against the third

cooperative and the government, retaining its holding rights. The plainant then filed a writ in martial law court, which they won. The leasing cooperative appealed against the decision in the Supreme Court. By this time the martial law court was no longer in operation and the cooperative again confirmed its right to the six-year lease. The third cooperative, which had already paid for the lease on the basis of the martial law court decision, applied to Ministry of Land for reconsideration. This application was sent to the District Commissioner of Moulvibazar and at the end of the six-year lease, the plainant was awarded a three-year lease (1988-1991) to the *beel*. When this happened, the original leaseholders filed a case with the Senior Assistant Judge which said that, due to the decision of the martial law court, they had suffered a considerable financial loss. To compensate for this loss they requested the lease for another three years. The court issued a favourable decision and the cooperative regained the lease for the period 1991-1994 but they had to pay a 10% rate increase.

The various cases and counter cases filed over the period 1982-1994 affected the revenue generated by the *beel*, which rose and fell several times (Table 6.1). The declines in revenue were mainly the result of compensation provided to the injured parties by the government.

Table 6.1 Revenues earned from Chatla *beel*, 1982-1994

Lease Year(s)	Lease Length (years)	Lease Type	Revenue Earned (Tk./yr.)	Increase/ Decrease (%)
1982-88	6	Renewable	120,000	-
1985-88	3	Renewable	108,000	- 10*
1988-91	3	Renewable at 10% enhanced rate	135,000	25
1991-94	3	Renewable at 10% enhanced rate	131,000	- 20*

* Less revenue was received because the party was compensated for costs incurred because of cases filed in 1985-86

Only two lessees have held the lease to the *beel* over the past 12 years: one held the lease twice for a total of nine years (1982-88 and 1991-94), the other held the lease only once for a three-year period (1988-91).

6.2.2 Development and conservation

Under the disputatious conditions surrounding the leasing of this *beel*, which included disruptions to fishing activities, the lessee has not felt free to invest in any development work but has undertaken some fish conservation measures. In 1991-92 and 1992-93 he employed eight guards to patrol the *beel*, and in 1993-94 he hired 12 guards, four of which were

employed only for the peak fishing period. The guards worked in teams of two, and each team was provided with a boat. The lessee also reported that he practised pile fishing in the *beel*, placing a number of *katha* and releasing carp fingerlings.

6.2.3 Fishing and marketing

Fishing in the *beel* during the year of this study started in *Magh* (January/February) and was expected to end in *Choytra* (March/April). Fishing parties were hired on a catch-share basis at a 20% share. According to the lessee, the share is somewhat lower than for other *beel* because the fishermen were provided with some of their gear and because of the high productivity of *katha* fishing. In his opinion the fishermen were satisfied with their share. The fishermen themselves brought boats and some less expensive gear. Among the gear used in the *beel* was *ber jal, kafri jal/ghono jal* and *moha jal*. The fishermen built their own houses at the *beel*, and the lessee also erected structures to house himself, his manager, the guards and an imam to lead prayers, and also to serve as a sales centre.

The lessee visited the *beel* frequently and often stayed overnight. The guards, who patrolled the *beel* during fishing, sometimes helped fishing parties to bring their catch to the sales centre. The fish were sold in baskets or lots through open auction to *nikari, bepari* and others at the *beel* sales centre. Sometimes the fishermen graded the fish by size and species before sale (*nikari* were occasionally observed helping the fishermen to grade their catch). Unsold fish, mainly *puti, chanda, tati* and *chingri* were dried at the *beel* site. *Gajar* were also dried because they brought a higher price in this form.

6.2.4 Management problems

Duplicate leasing by officials of several government departments seriously hampered the leasing of the *beel*. The only solution to this problem was to take legal action. The lessee eventually won his case against the competing fishermen's cooperative and the government.

6.3 Costs and Earnings

The three-year lease cost Tk.131,000 in 1991-92 and increased by 10% annually after that. Other costs reported by the lessee included guards, *katha,* boats, fingerlings and the cost of fishing, which included gear, as well as salaries for the manager and the imam. The lessee was reluctant to provide information about the amount paid to the fishing parties. The costs

incurred during the lease period are itemized in Table 6.2 and totalled in Table 6.3. The leaseholder declined to provide any earnings information.

Table 6.2 Costs incurred on Chatla *beel*, 1991-1994 (Tk.)

Year	Cost Item	Amount	Interest @ 10%*	Total
1991-92	Leasing cost	131,000	13,100 (12)	144,100
	Guards	115,200	11,520 (12)	126,720
	Katha/bamboo	174,000	8,700 (6)	182,700
	Boats for guards	12,000	1,200 (12)	13,200
	Fingerlings	21,000	1,050 (6)	22,050
Subtotal				488,770
1992-93	Carryover balance	488,770	48,877 (12)	537,647
	Leasing cost	144,100	14,410 (12)	158,510
	Guards	115,200	11,520 (6)	126,720
	Katha/bamboo	23,000	1,150 (6)	24,150
Subtotal				847,027
1993-94	Carryover balance	847,027	84,703 (12)	931,730
	Leasing cost	158,510	15,851 (12)	174,361
	Guards	120,000	12,000 (6)	132,000
	Manager & Imam	12,600	158 (1.5)	12,758
Total				1,250,849

* Figures in parentheses are the number of months for which interest was calculated.

Table 6.3 Total cost of Chatla *beel*, 1991-1994 (Tk.)

Cost Item	Amount	% of Total*
Direct costs		
Leasing costs	433,610	35
Guards	350,400	28
Katha/bamboo	197,000	16
Fingerlings	21,000	2
Boats for guards	12,000	1
Manager and Imam	12,600	1
Indirect costs		
Interest sacrificed	224,233	18
Total	**1,250,849**	**100**

* Total may not equal 100 due to rounding.

6.4 Comments of Lessee

Only the Ministry of Fisheries should be permitted to make any recommendation or comment on the leasing of a *beel*. Other government officials should be prevented from issuing duplicate leases.

CASE STUDY: TURAL *BEEL*

7.1 Description of the *Beel*

Name: The *beel* is both locally and officially known as Tural *beel.*

Location: The water body is in Hakaluki *haor* about 35 km north east of Moulvibazar town under Chatla *haor mauza*, Kulaura *thana*, Moulvibazar district. It is just west of Haor Khal *beel*, which has a more important fishery. The *beel* is not subject to flood control.

Area: The total area of the *beel* is about 40 acres.

The Lessee: The current lessee is *maimul*, as were all his predecessors as far back as 1983. The leaseholder, a wealthy and intellectual man, lives in Moulvibazar district town. He is secretary of one fishermen's cooperative and a member of a second one. Although he was vocal in his support of poor fishermen, he pays his fishermen only 10% of the catch and provides them with no food, shelter or equipment.

7.2 Management of the *Beel*

7.2.1 Leasing

Leasing of Tural *beel* is managed by the Moulvibazar ADC(R) office. Although it was once leased on a three-year basis, the current leaseholder's contract is for a single year. He reported that there had been a delay in issuing the lease that had interfered with his ability to manage it properly. According to the lessee, he received the rights to the fishery in *Ashwin* (September/October), just three months before fishing started.

Since 1983 only three individuals have held leases to Tural *beel.* Only one of these leased the *beel* twice, each time for three years (1983-1989). Another man held the lease from 1989-1992 and in 1992-93 the *beel* was not fished because of a case filed with the High Court.

All of the lessees have been connected with fishermen's cooperatives.

The revenues the government earned from this *beel* have varied over the period for which records were available. There was a sharp decrease in revenues for the 1986-89 period, but since then revenues have increased (Table 7.1).

Table 7.1 Revenues earned from Tural *beel*, 1983-1994

Lease Year(s)	Lease Length (years)	Revenue Earned (Tk./yr.)	Increase/ Decrease (%)
1983-86	3	233,000	-
1986-89	3	143,750	-38
1989-92	3	190,000	32
1993-94*	1	245,100	29

* The *beel* was not leased in 1992-93.

7.2.2 Development and conservation

The current leaseholder spent nothing to develop the *beel*, but did invest in some fish conservation measures. He employed six guards for three months and placed *katha* and bamboo in the *beel*.

7.2.3 Fishing and marketing

Since the *beel* dries up every year from *Falgoon* to *Choytra*, the fish are harvested annually. The current lessee hires fishermen from surrounding villages on a catch-share basis at a 10% rate, considerably less than fishermen get for working on *haor* Khal *beel*, where they make anywhere from 10% to 60%. The catch is sold at the *beel* through open auction in the presence of the fishermen.

7.2.4 Management problems

- Untimely leasing resulted in poor management for fish production.
- Siltation has reduced the depth of the *beel* to such an extent that it dries up every year. The shallow water depth is a poor environment for fish.
- Official corruption hinders the leasing of the *beel*.

7.3 Costs and Earnings

The costs incurred for the management of this *beel* in 1993-94 consisted of the lease cost, a contribution to the Local Reserve Fund (LRF) kept by the Deputy Commissioner, guards, *katha*/bamboo and boats. Table 7.2 itemizes these costs.

The highest percentage of the cost went to paying for the lease (68%), followed by *katha*/bamboo (17%), interest (8%) and guards (6%). No information on earnings was made available.

Table 7.2 Costs incurred on Tural *beel*, 1993-94 (Tk.)

Cost Item	Amount	Interest @ 10%*	Total	% of Total
Leasing cost	245,100	24,510 (12)	269,610	68
Local reserve fund (LRF)	2,000	200 (12)	2,200	1
Guards	21,600	270 (1.5)	21,870	6
Katha/bamboo	60,000	3,000 (6)	63,000	17
Boats for guards	2,600	65 (3)	2,665	1
Total	331,300	28,045	359,345	93†

* Figures in parentheses are the number of months for which interest was calculated.
† Interest accounted for 8% (total percentage is more than 100 due to rounding).

7.4 Comments of Lessee

- The power that locally influential people wield over the leasing of fisheries needs to be stopped by the proper implementation and enforcement of laws.
- Re-excavation of the *beel* could save fisheries resources for future generations.

CASE STUDY: KASTOCHAPRAR *BEEL*

8.1 Description of the *Beel*

Name: The official name of this water body is Kastochaprar *beel*, but it is locally known as Karchabrar *beel*.

Location: Kastochaprar *beel*, located in Shanghair *haor* about 20 km south of Sunamganj town south west of Dekker *haor*, is in Andabaj and Baromoha *mauza*, Sunamganj *thana*. The *beel* is subject to partial flood control by submersible embankments constructed along the Old Surma River.

Area: The office of the Sunamganj ADC(R) reports that the area of the *beel* is unknown. Based on a field estimate, its area is approximately 53 acres, but the leaseholder claims a larger area that includes boro rice fields surrounding the *beel*.

The Lessee: The current lessee, a Muslim from a village about 20 km from the *beel* in Sunamganj, is operating the *beel* on a one-year lease agreement. He is not directly involved in the catching of fish, choosing instead to contract that work to groups of fishermen. Although he usually stays in the *beel* area during fish harvests, he sometimes leaves a representative in charge for brief periods. The leaseholder also has other business interests in Sunamganj.

8.2 Management of the *Beel*

8.2.1 Leasing

Kastochaprar *beel* is leased out by the ADC(R) in Sunamganj. It was leased out for three-year periods until 1990-91, when the lease period was reduced to two years. Starting in 1992-93, the period was reduced to one year. From 1981-82 to 1986-87 the leaseholder remained the same. Since then, each lease period has been under a different lessee. This could be due either to declining profitability of the fishery or increased competition among potential leaseholders.

Table 8.1 summarizes the revenues earned under the leases issues from 1981-82 to 1993-94. The table shows that, under the existing law, if the *beel* is leased for one year as opposed to three or more years, the government would earn significantly higher amounts of revenue. In fact, the government earned less from the shorter-term leases of 1992-93 and 1993-94 because fish production declined, which discouraged potential lessees from offering higher

amounts. Under short-term leasing agreements lessees lack any incentive to invest in the development of the *beel*'s fisheries. In addition, the *beel* is silting up every year, creating an increasingly less favourable environment for fish.

Table 8.1 Revenue earned from Kastochaprar *beel*, 1981-94

Lease Year(s)	Lease Length (years)	Revenue Earned (Tk.)	Increase/Decrease (%)
1981-84	3	58,750	-
1984-87	3	73,438	25
1987-90	3	101,000	37.5
1990-92	2	125,250	24
1992-93	1	61,000	-51.3
1993-94	1	75,500	23.8

8.2.2 Development and conservation

The leaseholder invested in no development work on the *beel*, but did take some conservation measures, installing four *katha* covering a total area of 252,890 ft^2. He placed the *katha* in *Ashwin* (September/October), as flood waters started to recede and the bund surrounding the *beel* resurfaced. To protect his interests the leaseholder started visiting the *beel* frequently after installing the *katha*, and he hired two guards (*paharadar*) with country boats to patrol the *beel* until the harvest could be completed.

8.2.3 Fishing and marketing

Fishing in Kastochaprar *beel* started in *Poush* (December/January) and was set to continue until *Falgoon* (February/March). During the harvest period the fishermen hired by the leaseholder lived at the *beel* site in temporary houses made of sun grass. The fishing groups themselves financed the construction of the houses; when their work was completed, the houses were dismantled. Using funds provided by the lessee, the fishermen acquired the gear they needed and brought it with them to the site. When the harvest was completed, the fishermen were required to repay the leaseholder for the gear and take it with them.

The fishing groups worked on a catch-share basis in either a 50:50 ratio or 63:37 ratio. Those fishermen harvesting the *katha* received the 50:50 share. As they explained it, their

higher share ratio was because this fishing was done with *ber jal*, which required more fishermen. In addition, there was an insufficient quantity of fish in the *katha* to cover the fishermen's daily wages. The smaller fish caught in the open waters of the *beel* by smaller fishing groups using *pan jal* and *current jal* were, they said, more abundant.

The catch from the *beel* was sold at auction, sometimes after grading by size and species. The unsold fish, particularly *gajar*, *shol*, *taki*, *puti*, *chanda*, small *chingri*, etc., were dried at the *beel* site by women, often the fishermen's wives.

8.2.4 Management problems

1. The *beel* area is not clearly demarcated. As a result, people from the villages surrounding the water body cultivate boro paddy along its margins and harvest fish from these areas.
2. The *beel* has no canal, making it impossible to capture fish by draining its waters. This reduces the efficiency of the harvest and increases costs. In addition, the early rains that occur in Sunamganj raise water levels, ensuring that part of the stock remains uncaught.
3. There is no uncultivated land around the *beel* that can be used as a landing area and temporary camp (*khola*) for the fishermen. The area currently being used for this purpose is *khas* land, but a man who cultivates it and claims to rights to it demands payment for its use.

8.2.5 Steps taken to solve problems

1. The leaseholder hired *beel* guards to reduce fishing by the villagers.
2. To increase harvest efficiency the lessee allowed as many people as were willing to catch fish from the *beel* on a share basis.
3. After negotiations, the man cultivating the *khas* land was paid Tk.3,000 for the use of the land as a landing place/market and *khola* during the harvest period.

8.3 Costs and Earnings

As was true in all the case studies, costs and earnings were sensitive issues for the lessee, who was more liberal with information about the cost of his operation than about his

earnings. The information reported in Table 8.2 is based solely on answers the leaseholder provided during an interview.

Table 8.2 Costs and returns for Kastochaprar *beel*, 1993-94

	Amount (Tk.)	Interest @ 10%*	Total (Tk.)	% of Total†
Leasing cost	75,500	7,550 (12)	83,050	57
Guards (including food)	16,000	800 (6)	16,800	12
Katha/Bamboo (including labour)	40,000	2,000 (6)	42,000	29
Boats for guards	1,000	100 (12)	1,100	1
Rental of land for *Khola*	3,000	150 (6)	3,150	2
Total cost	**135,500**	**10,600**	**146,100**	**100**
Paid-up fishermen's shares‡			150,000	
Gross cost			296,100	
Gross return			350,000	
Net benefit			53,900	

* Figures in parentheses are the number of months for which interest was calculated.
† May not total 100 due to rounding.
‡ Fishing groups hired on catch-share basis at ratios of 50:50 and 63:37.

8.4 Comments of Lessee

- An official's demand for a bribe delayed acquisition of the lease. This shortened the amount of time the leaseholder had to initiate fish conservation activities, resulting in a sizeable production loss.
- Bidders do not have equal access to the papers submitted when the *beel* is leased out through tender.
- Although the government prefers to lease the *beel* to fishermen's cooperative societies, their lack of funds forces them to rely on moneylenders.
- Duplicate leasing by *thana*, district and ministry offices resulted in difficulties for the lessee.

CASE STUDY: BARODAI KASTUGANGA GROUP FISHERY

9.1 Description of the *Beel*

Name: Although locally known as Bardai or Barodoi *beel*, the official name of this *jalmahal* is the Barodai Kastuganga Group Fishery.

Location: Barodai *beel* lies in Sunamganj district, about 8 km north of Paglabazar union and 15 km east of Sunamganj town. The Mahasingh River (locally known as Uttarganga River) passes through the western side of the *beel*. A small *khal/khara* known as Jaida *nadi* connects the *beel* with the Mahasingh, and there is an embankment at the connecting edge of Jaida *nadi* and the Mahasingh. The *nadi* is used to drain the *beel* during fishing, and the embankment also serves as a fishing centre. The *beel* lies at the edge of the relatively free flooding Dekker *haor*. River flooding originates from the Surma River to the north of the *beel*. Local village roads and embankments have reduced the extent of direct overbank flooding by the river.

Area: A number of water bodies make up the group fishery: Chatal *beel*, Rangaputi *beel*, Kastuganga *beel*, Votishara *beel*, Luha Koschi *beel*, Barodair *beel*, Boro-Doi *beel*, Modder Dovi *beel*, Lokosi *beel*, Soiteki *beel* and Jaida *nadi*. The total area of the fishery is about 399.33 acres.

The Lessee: A former leaseholder finances the current lessee, who is from a village in Pagla union, Sunamganj district. The financier's grandfather bought part of a *zamindar*'s estate and, according to the local people, gave Barodai *beel* its present composition.

9.2 Management of the *Beel*

9.2.1 Leasing

The leasing of the Barodai Kastuganga Group Fishery has been managed by the Sunamganj ADC(R) since 1979-80; before that the Sylhet ADC(R) managed the leasing. The records of the Sunamganj ADC(R) show that the fishery was leased for six years in 1979-80 under a development scheme approved by the Land Ministry. The same lessee also held the lease for the subsequent period (1985-88). Following the introduction of the New Fisheries Management Policy (NFMP) in 1987 the *beel* was leased for three years (1988-1991) by a fishermen's cooperative. Although the fishermen's cooperative held the lease to the *beel*, the

current leaseholder financed the deal. This man also claims to have financed the current lease (1991-1994), but the official record shows that a man from Golapganj is the lessee. When asked why he had offered such a high rent for the current lease, the financier explained that one of his brothers, a union chairman, was bidding against him for the *beel*. To retain his control of the fishery the financier contacted the current leaseholder and instructed him to win the bid, which he did at a cost of Tk.1,030,000, about 156% more than the previous lease amount (Table 9.1).

Table 9.1 Revenues earned from Barodai *beel*, 1979-1994

Lease Year(s)	Lease Length (years)	Lease Type	Revenue Earned (Tk.)	Increase/ Decrease (%)
1979-85	6	Renewable	200,000	-
1985-88	3	Renewable	250,000	25
1988-91	3	Renewable	402,500	61
1991-94	3	Renewable	1,030,000	156

The table shows that revenue from the *beel* has steadily increased, often by rather large percentages, suggesting that this *beel*'s fishery is highly profitable. Since the financial backer of the current leaseholder, by his own claim, has been leasing the *beel* for 18 years (the ADC(R) only provided 15 years worth of records) and willingly paid these ever-higher rates, the fishery is undoubtedly very profitable.

9.2.2 Development and conservation

The lessee has done no development work during the current leasing period, but has made a number of investments in the fishery in the past. Between 1979 and 1985, for example, he constructed the embankment at the connecting edge of Jaida *nadi*. During the current leasing period he invested in fish conservation, installing *katha* and hiring guards and boats. According to the financier, *katha* not only provide shelter for fish but the branches also provide fish with food. He also claimed to disapprove of supplying artificial feed for fish, but one of his neighbours said that the lessee put truckloads of artificial feed into the *beel*. The guards are hired to patrol the *beel* continuously and, under his orders, do not allow anyone inside the *beel*. People living around the *beel* are careful when traversing the *beel*—even during the monsoon, when boats are the only available mode of transport.

The financier takes a mystical approach to tending his *beel*. He believes that the waters and their resources are controlled by the spirit *Khoyaj Khijir,* locally known as *Chata*. When *Chata* is satisfied, the lessee believes, he will yield up the vast resources at his command. According to the lessee, his relationship with the spirit enables him to harvest the fish in Rangaputi and Kastuganga *beel*; those who have leased these *beel* in the past were unable to make them productive. Among the steps the lessee takes to protect his relationship with the spirit is a prohibition against women entering the *beel*. He also does not allow any man wearing shoes or in ill health to enter. Once, he reported, his fishermen were unable to catch any fish even though he could see that there were many of them in the *beel*. To solve this problem, he arranged a *milad* (religious festival) and the slaughter of two cows, which he shared with the local inhabitants, followed by the distribution of sweets among the people living around the *beel*. The offering apparently worked well, and since then he repeats this practice before fishing begins. He also said that fishing never starts until *Amabashya*, the night before the new moon, and it ends promptly on *Purnima,* the night of the full moon.

9.2.3 Fishing and marketing

The leaseholder practices *katha* fishing and harvesting of the catch occurs at three-year intervals. The last year of the current lease (1994) was a fishing year, and the harvest started in *Poush* (December/January) and was set to end in *Choytra* (March/April). Local fishermen were hired for a monthly salary plus two meals a day, and the leaseholder also provided them with housing on the *beel* site. The fishermen brought their own gear. Excess water was drained from the *beel* through Jaida *nadi* before fishing started.

The fishing centre, located on an embankment, has a floor for drying fish and gear. The floor is surrounded by a bamboo barrier (*bana*) and the roof is covered with nets to protect the drying fish from birds. The centre also has a fish processing room, where the catch is brought in and sorted according to species and size. The fish were sold to *bepari* and *nikari* both at the *beel* fishing centre and in Sylhet through auction. Among those who purchased fish were many wealthy people and high officials from Sunamganj and Sylhet. The lessee, in fact, sometimes offers them fish free of cost.

9.2.4 Management problems

- Distribution of *khas* land to the landless hinders the lessee's fish conservation program. The owners of newly distributed land tend to catch fish from their land during inundation.
- Crop cultivation and the associated use of agro-chemicals cause degradation of the fish environment. The leaseholder believes that the use of insecticides is one cause of fish disease.
- The use of *current jal*, he says, also causes fish disease.
- The *khas* lands distributed have been cleared and cultivated. These lands were previously forested, which the fish used for shelter and grazing during flooding.

9.2.5 Steps taken to solve problems

- The leaseholder hired guards to protect against illegal fishing in the *beel*.
- To compensate for the loss of forest, the lessee has put a large number of *katha* and bamboo fish shelters in the *beel*. The branches used to make the *katha* and the vegetation that accumulates on the bamboo are good sources of fish food.

9.3 Costs and Earnings

The costs incurred during the most recent three-year lease (shown in Tables 9.2 and 9.3 were for leasing, guards and boats, brush shelters, *katha*, bamboo, salaries and food for the fishermen, and bamboo mats (*chatai*).

The highest share of the total cost is for the fishing group, whose salaries and food together accounted for 33%; the lease itself was 30% of the total, and construction materials (*katha*, bamboo, *bana* and *chatai*) accounted for 19%.

Although the financier was unforthcoming about his earnings from the *beel*, an individual who frequently visits the *beel* during fishing said that he would earn at least Tk.40-50 million (Tk.4-5 *crore*).

9.4 Comments of Lessee

- The use of current *jal* should be stopped.
- The government should take steps to control fish disease.
- A *beel* lease should include the floodplain surrounding the fishery.
- Construction of a road to the *beel* would help improve fish marketing.

Table 9.2 Costs incurred on Barodai *beel*, 1991-1994 (Tk.)

Year	Cost Item	Amount	Interest @ 10%*	Total
1991-92	Leasing cost	1,030,000	103,000 (12)	1,133,000
	Guards	48,000	2,400 (6)	50,400
	Katha/bamboo, etc.	1,700,000	85,000 (6)	1,785,000
	Boats for guards	350,000	35,000 (12)	385,000
	Subtotal			3,353,400
1992-93	Carryover balance	3,353,400	335,340 (12)	3,688,740
	Leasing cost	1,030,000	103,000 (12)	1,133,000
	Guards	48,000	2,400 (6)	50,400
	Subtotal			4,872,140
1993-94	Carryover balance	4,782,140	487,214 (12)	5,359,354
	Leasing cost	1,030,000	103,000 (12)	1,133,000
	Guards	48,000	2,400 (6)	50,400
	Fishing group hired	1,248,000	20,800 (2)	1,268,800
	Food for fishing group	2,160,000	36,000 (2)	2,196,000
	Bamboo shelter (*bana*)	210,000	7,000 (4)	217,000
	Total			10,224,554

* Figures in parentheses are the number of months for which interest was calculated.

Table 9.3 Total costs for Barodai *beel*, 1991-1994 (Tk.)

Cost Item	Amount	% of Total
Direct Costs		
Leasing cost	3,090,000	30
Guards	144,000	1
Katha/Bamboo	1,700,000	17
Boats	350,000	4
Fishing group hired	1,248,000	12
Food for fishing group	2,160,000	21
Bana and *chatai*	210,000	2
Indirect Costs		
Interest sacrificed	1,322,554	13
Total	**10,224,554**	**100**

CASE STUDY: DABUR-PUTIA-MOLLAPARA GROUP FISHERY

10.1 Description of the *Beel*

Name: Dabur-Putia-Mollapara Group Fishery, as it is officially known, consists of three *beel*: Dabur, Putia and Mullapara.

Location: The three *beel* in the group are within 3 km of one another but each is in a different *mauza*. Dabur *beel* is in Dabur *mauza*, Putia *beel* is in Ranshi *mauza* and Mullapara *beel* is in Kararaia *mauza*. All three *beel* are near the Dabur ferry ghat bridge on the road from Sylhet to Sunamganj. The *beel* flood freely from the Old Surma River through a large connecting canal. However, major roads to the west and south have undoubtedly altered natural flooding and drainage patterns of the area.

Area: The total area of the three *beel* is 58.50 acres.

The Lessee: The current leaseholder, who represents a fishermen's cooperative, has sublet the fishery to another individual for 40% of the profits, with the sublessee bearing all costs, including the cost of the lease. Since 1982 all the lessees have been wealthy *maimul*, as are the current lessee and sublessee. The sublessee claimed that if the three *beel* were leased separately, the cost of the lease would be lower and within the range that middle-class fishermen and members of the fishermen's cooperative could afford.

10.2 Management of the *Beel*

10.2.1 Leasing

Grouping these three *beel* into a single fishery increased its total area, putting its leasing under the control of the ADC(R). If the *beel* were leased separately, the leasing would be managed by the Thana Nirbahi Officer (TNO). Three individuals have leased the fishery over the past 12 years (1982-94). One, who is related to the financier of the Barodai Kastuganga Group Fishery, held it for two consecutive three-year periods. The other two lessees have each had the fishery for three years. The previous leaseholder was a fishermen's cooperative member.

The government earned much less revenue from this fishery (Table 10.1) than from nearby Barodai *beel*. Nonetheless, there was a 681% increase in earnings with the most recent lease, indicating a high level of competition among the bidders.

Table 10.1 Revenues earned from Dabur-Putia-Mollapara group fishery, 1982-1994

Lease Year(s)	Lease Length (years)	Amount (Tk.)	Increase/Decrease (%)
1982-85	3	2,090	-
1985-88	3	3,135	50
1988-91	3	8,000	155
1991-94	3	62,500	681

10.2.2 Development and conservation

Neither leaseholder nor sublessee has undertaken development work on any of the *beel* of this group fishery. Conservation activities have consisted of hiring 10 guards, along with boats, to patrol the *beel*. The sublessee has also placed some *katha* and bamboo in the three *beel* every year and has provided fish food on several occasions.

10.2.3 Fishing and marketing

The *beel* were harvested once in each three-year leasing period from *Poush* (December/ January) to *Choytra* (March/April). The sublessee hired 20 fishermen for a monthly salary plus meals to harvest the catch (the guards were also provided with meals). The fishermen provided their own gear and boats. The catch was brought to the sales centre, graded, and sold through auction. At the time of the field visit, no fish were being dried at the centre. The sublessee reported that he had to pay for the use of some land to establish his sales centre, since no free land was available. At the centre, he constructed houses for himself, the guards and the fishing groups.

10.2.4 Management problems

- Illegal fishing was a major problem mainly because the three *beel* were dispersed. To overcome this problem, the sublessee hired year-round guards for each *beel*.

- Some management costs were also increased due to the dispersion of the *beel*. This included the costs for guards, *katha*/bamboo, boats, and shelter for the guards and fishing groups.
- Land is available for a sales centre only at a cost.

10.3 Costs and Earnings

The costs incurred for the management of this fishery are shown in Tables 10.2 and 10.3. The cost of the lease, 12% of the total, was exceeded by the costs for guards (27%) and *katha*/bamboo (20%). As in most other cases, the sublessee provided no data on his earnings, reporting only that a 40% share went to the lessee.

Table 10.2 Costs incurred on Dabur-Putia-Mollapara group fishery, 1991-1994
(Tk.)

Year	Cost Item	Amount	Interest @ 10%*	Total
1991-92	Leasing cost	62,500	6,250 (12)	68,750
	Guards	144,000	7,200 (6)	151,200
	Katha/bamboo	230,000	11,500 (6)	241,500
	Fish feed	10,000	500 (6)	10,500
	Boats for guards	80,000	8,000 (12)	88,000
	Labour to place *katha*	40,000	2,000 (6)	42,000
	Shelter for guards	54,000	5,400 (12)	59,400
	Land for sales centre	5,000	500 (12)	5,500
	Subtotal			666,850
1992-93	Carryover balance	666,850	66,685 (12)	733,535
	Leasing cost	62,500	6,250 (12)	68,750
	Guards	144,000	7,200 (6)	151,200
	Katha/bamboo	40,000	2,000 (6)	42,000
	Fish feed	10,000	500 (6)	10,500
	Labour to place *katha*	10,000	500 (6)	10,500
	Land for sales centre	5,000	500 (12)	5,500
	Subtotal			1,021,985
1993-94	Carryover balance	1,021,985	102,199 (12)	1,124,189
	Leasing cost	62,500	6,250 (12)	68,750
	Guards	144,000	7,200 (6)	151,200
	Katha/bamboo	50,000	2,500 (6)	52,500
	Fish feed	10,000	500 (6)	10,500
	Labour to place *katha*	10,000	500 (6)	10,500
	Fishing group hired	96,000	1,600 (2)	97,600
	Food for fishing group	72,000	1,200 (2)	73,200
	Land for sales centre	5,000	500 (12)	5,500
	Total			1,593,939

Table 10.3 Total cost of Dabur-Putia-Mollapara group fishery, 1991-1994

Cost Item	Amount (Tk.)	% of Total
Direct Costs		
Leasing cost	187,500	12
Guards	432,000	27
Katha/bamboo	320,000	20
Fish feed	30,000	2
Boats for guards	80,000	5
Labour to place *katha*	60,000	4
Fishing group hired	96,000	6
Food for fishing group	72,000	4
Shelter for fishing groups	54,000	3
Land for sales centre	15,000	1
Indirect Costs		
Interest sacrificed	247,439	16
Total	**1,593,939**	**100**

CASE STUDY: DHAPA *BEEL*

11.1 Description of the *Beel*

Name: The fishery is both officially and locally known as Dhapa *beel*. It actually comprises six *beel*: Dhapa, Hukulura, Wajel, Shingida, Bokbokia and Alaida.

Location: Dhapa *beel* is in Gobinduapur *mauza*, Sunamganj District, on the north side of the Sylhet-Sunamganj road near the Ashanmara ferry ghat. The *beel* floods freely from a canal connecting with the Old Surma River. However, major roads to the east and south have undoubtedly altered natural flooding and drainage patterns in the area.

Area: The total area of the *beel* is about 41.07 acres.

The Lessee: The current lessee is from the *thana* and district of Sunamganj. His father—and his partner in the fishery—is a doctor and pharmacist, but he also has some agricultural land. The *jalmahal* is a new area of business for them. Although they are Muslim, they are not *maimul*.

11.2 Management of the *Beel*

11.2.1 Leasing

Although these *beel* can support *katha* fishing, they are leased out for only one year at a time by the ADC(R) office at Sunamganj. According to the lessee, the officials sometimes extort money to issue the lease. The leaseholder reported paying an official Tk.8,000 to get his current lease for Tk.22,050, which is less than the Tk.29,500 he had paid for the 1992-93 lease.

11.2.2 Development and conservation

Since the *beel* is only leased for one year, no development work has been done. The leaseholder did install some *katha* and hired two guards to patrol the fishery. The lessee hired the guards at a salary of Tk.1,200/month for six months starting in *Ashwin* (September/October); he also provided them with a boat.

11.2.3 Fishing and marketing

Fishing started in *Poush* (December/January) and was expected to end in *Falgoon* (February/March). Fishermen were hired on a catch-share basis and received 50% of the harvest. This share was higher than that for the 1992-93 lease period because there were fewer large fish in the *beel*. The catch was sold through open auction at the *beel* site. None of the fish was dried. Although the leaseholder hired guards to watch after his interests, adults and children from a nearby village were observed freely catching fish from the *beel* using small gear such as *thella jal*.

The *beel* normally dries up from *Choytra* to *Baishak* (March to May), but local farmers who cultivate boro around the water body persuaded the leaseholder to drain the *beel* in January.

11.2.4 Management Problems

- Extortion attempts by officials caused a delay in issuing the lease. The delay resulted in impaired management of the *beel*.
- Since there were no guards on the *beel* during the period when the leaseholder was waiting for the issue of the lease, people from the surrounding villages caught fish freely.
- Crop cultivation along the edge of the *beel*, and even into its shallower waters is common in the area. As a result, the farmers insist that the *beel* be drained early enough for them to plant boro. This sometimes has meant that fishing must be done at a time when fish prices were low.

11.3 Costs and Earnings

The costs provided by the leaseholder for the 1993-94 year included the lease plus a bribe, guards, *katha,* bamboo, boats and labour exclusive of the fishermen's 50% share. Table 11.1 summarizes these costs. The highest percentage of the cost was for the lease and bribe (43%), followed by the cost of *katha*/bamboo (23%) and guards (21%).

Table 11.1 Costs incurred on Dhapa *beel*, 1993-94 (Tk.)

	Amount	% of Total	Interest @ 10%*	Total
Leasing cost	22,050	32	2,205 (12)	24,255
Bribe	8,000	11	800 (12)	8,800
Guards	14,400	21	360 (3)	14,760
Katha/bamboo	16,000	23	800 (6)	16,800
Boats for guards	4,000	6	200 (6)	4,200
Labour for placing *katha*	720	1	36 (3)	756
Total	65,170	94†	4,401	69,571

* Figures in parentheses are the number of months for which interest was calculated.
† Interest constituted 6% of the total.

CASE STUDY: BARO *HAOR BEEL*

12.1 Description of the *Beel*

Name: Baro *Haor beel* is the official and local name of this water body.

Area: The total area of the *beel* is 215.49 acres.

Location: The *jalmahal* covers the *mauzas* of *Khalilpur, Chintamoni, Padinapur, Barari* and *Shadurhati* of Moulvibazar and Nabiganj *thanas* in Moulvibazar district. It is about 15 km west of Goygor village and 8 km west of Sarkerbazar on the Moulvibazar-Sylhet Highway. The *beel* lies within a flood protected area with full flood control embankments along the Mani River and submersible embankments along the Shaka Borak River, a tributary of the Kushiyara River.

The Lessee: The lessee, a *maimul* from a village in Moulvibazar district, has interests in other businesses. His younger brother assists him in his business. The leaseholder also leads a fishermen's cooperative that he formed with his own fishing groups. A former lessee of the *beel*, is related by marriage to the present lessee.

12.2 Management of the *Beel*

12.2.1 Leasing

Leasing of the *beel* is under the control of the Moulvibazar ADC(R) office, which provided leasing information for 1982-1994. The lessee himself provided additional historical information about the leasing of the fishery. Different members of the same family have held the lease for 39 of the past 48 years. The leaseholder reported that his father first leased the *beel* in 1947. Since then the family bid for the *beel* every three years until 1976. That year the lease was won by a man from Nabiganj *thana*, Habiganj district. At the end of that three-year period, a man from Rajnagor *thana* held the lease for nine years (1979-1988). The current lessee regained the lease in 1988 and has held it since then. The *beel* is currently leased in the name of a fishermen's cooperative, which the leaseholder established in 1971.

The leaseholder reported that his father had leased the *beel* for Tk.2,000, while the most recent lease cost Tk.340,000. Over the past 12 years alone the cost of the lease has increased by 82%. Table 12.1 summarizes the leases on the *beel* from 1982 to the present.

Table 12.1 Revenues earned from Baro *Haor beel*, 1982-1994

Lease Year(s)	Lease Length (years)	Lease Type	Revenue Earned (Tk.)	Increase/ Decrease (%)
1982-85	3	Renewable	187,000	-
1985-88	3	Renewable	233,750	25
1988-91	3	Renewable	305,000	30
1991-94	3	Renewable	340,000	11

Although the cost of the lease has continued to rise, the most recent lease period rose less than in the past. This, the leaseholder explained, is because fish disease has increased in recent years, and the lessee has therefore been reluctant to offer a higher rent.

12.2.2 Development and conservation

No development work was done during the current leasing period, but some fish conservation work was done. Besides installing some *katha* (brush piles), the leaseholder employed 20 guards on a 24-hour schedule to patrol the *beel* area. Each guard was paid Tk.1,200 per month plus two meals a day. In 1993-94, the last year of the current lease, the leaseholder hired 11 additional guards for the months of *Poush - Falgoon* (December - March). In addition to their security duties, the guards also caught fish on a rotational basis.

12.2.3 Fishing and marketing

Fishing in Baro *haor beel* started in *Poush* (December/January) and was set to continue until *Choytra* (March/April). Thirty-five fishermen, in teams of five to eight fishermen each, worked on a share basis for about 25% of the catch. As in some other *beel* studied, the fishermen's share increased as the fish stock decreased, reaching 33% in late *Falgoon* and *Choytra*. The fishermen used their own gear and boats. The lessee provided boats for the guards who fished. They received no share of the catch.

Fish catches were brought to the *beel* fishing centre, where the lessee had constructed a shelter for himself and his assistants. The fish were sold to *nikari* through open auction in

the presence of the fishing groups. The fishermen themselves sometimes helped the leaseholder during the auction and occasionally graded fish by size and species before sale.

12.2.4 Management problems

During his first leasing period (1988-1991), the lessee encountered considerable problems as a result of a conflict with a local administrative leader. This person urged the people of his community to bid for the lease and prevent any outsiders from taking it. Both parties reportedly spent a considerable amount of money to persuade officials to act in their favour. Since the bidding was held at the District Land Revenue Office, where the local leader had minimal influence, the current leaseholder won the rights to the fishery. This resulted in a brief period of armed conflict before the leaseholder secured his control of the fishery.

Other problems encountered by the leaseholder were:

- Harassment by district officials. The leaseholder reported that, although he sought the help of the police, he was always required to make some form of payment, even though results were usually unsatisfactory.
- Since the police are ineffective (and expensive), the leaseholder has to manage his problems for himself. This usually means giving people money or food during times of distress or allowing them to fish for consumption in the *haor*. Sometimes people with crop lands surrounding the *haor* refuse to allow passage to the leaseholder's people or to *nikari* coming to buy fish. When the leaseholder believes that the farmers' actions are unreasonable he resorts to force.
- An ulcerative fish disease is resulting in the loss of about 50% of the small fish population in the *beel*. In the leaseholder's opinion the government is not giving the fisheries sector as much care as the agriculture sector. He pointed out, for example, that although there is an exemption for bank loans when crops fail due to flood or other natural calamities, there is no such programme for fisheries.
- Since there are no roads connecting the *beel* with highways, transportation to and from the water body is difficult. Traders coming to purchase fish generally have to walk 10-15 km to get to the *beel*, and transferring fish even to the nearest markets takes a considerable amount of time. The leaseholder says he has a plan to construct a connecting road from the *haor* to the highway.
- The *haor* has no public sanitary latrine or facilities for drinking water. This is causing environmental degradation that is affecting both public health and the

condition of the fishery. The leaseholder recently sank a hand tubewell at his own expense to provide water for drinking and bathing.

- The water depth in the *beel* has been declining for years. It is now only about 1.5-2.5 feet deep; 20 years ago it was 6 feet deep and 30-35 years ago it was 9 to 12 feet deep.
- The sluice gate on Kharonal *khal*, through which water from the Manu River can enter the *haor*, is hindering fish migration. This has resulted in lower fish production over the past few years.

The leaseholder, feeling that he had to solve all these problems himself, has submitted a long-term (nine-year) project proposing that the government allow him to re-excavate the *haor* and construct a road. In exchange he will pay 10% more for each three-year lease period.

12.3 Costs and Earnings

Since the *beel* was not leased under a development scheme, the only costs incurred were for the lease, guards, *katha* and bamboo. Tables 12.2 and 12.3 summarize the cost of managing and maintaining Baro *Haor beel* for the 1991-94 period. The cost of the lease was the highest percentage of the total (58%).

The benefit accruing to the leaseholder, shown in Table 12.4, was estimated based on a one-day catch observation and an interview with the leaseholder.

Table 12.2 Costs incurred on Baro *Haor beel*, 1991-1994 (Tk.)

Year	Cost Item	Amount	Interest @ 10%*	Total
1991-92	Leasing cost	340,000	34,000 (12)	374,000
	Guards, *katha*, bamboo	150,000	7,500 (6)	157,500
	Subtotal			531,500
1992-93	Carryover balance	531,500	53,150 (12)	583,650
	Leasing cost	340,000	34,000 (12)	374,000
	Guards, *katha*, bamboo	200,000	10,000 (6)	210,000
	Subtotal			1,167,650
1993-94	Carryover balance	1,167,650	1,167,765 (12)	1,284,415
	Leasing cost	340,000	34,000 (12)	374,000
	Guards, *katha*, bamboo	100,000	5,000 (6)	105,000
	Total			1,763,415

* Figures in parentheses are the months for which interest was calculated.

Table 12.3 Total costs for Baro *Haor beel*, 1991-94 (Tk.)

Cost Item	Amount	% of Total*
Direct Costs		
Leasing cost	1,020,000	58
Guards, *katha*, bamboo, etc.	450,000	26
Indirect Costs		
Interest sacrificed	293,415	17
Total	**1,763,415**	**100**

* Figures may vary due to rounding.

Table 12.4 Cost/benefit analysis for Baro *Haor beel*, 1991-94

	Amount (Tk.)
Gross Return*	6,750,000
Gross Cost	1,763,415
Net Return	4,986,585
Cost/Benefit Ratio	3.83

* Excluding the fishermen's share.

CONCLUSIONS

FAP 17's study of ten *jalmahal* on *haor* in the North East Region provides some insight into the leasing practices of the region and permits some generalizations about the costs and benefits derived from fishing.

13.1 The Leasing System

The government's leasing system theoretically extracts a portion of a fishery's production in exchange for managing the transfer of leasing rights. In several cases examined, however, the transfer of those rights was either complicated by bureaucratic wrangling or subject to official corruption. These complications take a variety of forms. In Patasinga *beel*, for example, conflicting leases were issued by separate government entities, resulting in leasing delays and, ultimately, a loss of government revenue. Official corruption, such as occurred with Dhapa *beel*, has a similar effect. Many interviewed leaseholders expressed concern about these two issues.

Lessees are clearly able to manipulate the leasing system to achieve their own ends. It is obvious in many cases that wealthy leaseholders have circumvented the intentions of the NFMP, which sought to return *jalmahal* control to fishing communities, simply by starting or assuming control over a fishermen's cooperative. This occurred in Patasinga *beel* and Chatla *beel*, among others. Few of the leaseholders interviewed come from the ranks of traditional fishermen. Tural *beel*, where all the recent leaseholders have been *maimul*, therefore is exceptional in this regard. Part of the reason for this is that the cost of obtaining a lease has risen beyond the means of most fishing communities and fishermen's cooperatives. The only way they can retain even a small measure of control over a fishery is to barter their name in exchange for work.

The use of political or bureaucratic power or even, as in Baro *haor beel*, brute force is apparently viewed as a legitimate means of obtaining or retaining one's hold on a lease. This can—and frequently does—result in prolonged legal battles, such as occurred in Chatla *beel* and the Nagua-Dholia Group Fishery. Such battles can result in the prevention of dry season fishing activities on a water body. Lessees often have politically advantageous positions because they represent the local power structure and have links to higher levels of government.

Leaseholders also are often bound to one another by kinship. In Baro *haor*, for instance, several recent lessees have been related to one another and present and previous leaseholders of the Dabur-Putia-Mollapara and Barodai Kastuganga fisheries have been members of the same family.

Based on the cases examined, there is no apparent consistency in leasing terms. Lease periods range from one year to six years, but ADC(R) officials, whether to increase government revenue or for other reasons, exhibit a preference for shorter periods. Whatever the lease length, however, government ordinances require that the fee for each new lease be at least 25% higher than that of the previous lease. According to the leaseholders interviewed, this places an unrealistic burden on the production capability of the *beel*. They say that the order gives too much emphasis to generating more government revenue without helping to increase long-term fish production.

13.2 Operational Costs

Not only have leases become more costly than fishermen or their cooperatives can afford on their own, the investment required to operate a fishery too has risen out of their reach. Investors, including wealthy businessmen, moneylenders (*mahajan*) and influential bureaucrats, with the necessary funds have therefore assumed this role.

While the leasing fee itself often accounts for the highest proportion of the total cost, large sums are also spent on guarding the fishery against unauthorized fishing. For Tekuni *beel* these costs even exceeded the leasing fee. The other major expense frequently is the cost of constructing *katha* in the *beel* to improve catch efficiency.

Although the cost of operating a *beel* fishery can be high, particularly in areas where such operations are not well served by the transportation network, the fisheries appear to be profitable enterprises. In the only cases where data was supplied, Patasinga *beel*, Kastochaprar *beel* and Baro *haor beel*, the lessee made a reasonable profit from his operations. In most other cases, profitability can be assumed from the apparent high level of competition to obtain the lease, or from leaseholders' willingness to pay ever-increasing fees to get rights to the fishery.

13.3 Distribution of Benefits

To judge the potential socioeconomic impacts flood control may have on fisheries, it is essential to consider the distribution of fisheries benefits. In the cases examined, most of the benefit went to the leaseholder. The only exception to this was Patasinga *beel*, where the government lease accounted for more than 50% of the *jalmahal*'s productivity.

In all cases, the fishermen worked on a catch-share basis at rates ranging from 10% upward. Given the apparent profitability of these water bodies, the amount going to the fishermen seems particularly small. In Patasinga *beel,* the only fishery for which detailed data were made available, the fishermen received a total of 14% of the catch. When this was averaged out over the number of fishermen working, however, it amounted to a daily wage rate of Tk.39. This is well below the national average of Tk.50 and, in fact, was barely enough to provide the fishermen with a subsistence living.

It seems clear, therefore, that in the existing catch-share arrangement, the leaseholder rarely considers the welfare or interests of the fishermen who work for him.

13.4 Impacts on Fisheries

In two fisheries located within areas of full flood control, leaseholders complained that embankments and regulators had reduced fish migrations between rivers and floodplains and lowered catches. A third fishery was located inside an area of partial flood control using submersible embankments. Here, the leaseholder made no comment on the effects of flood control.

Most leaseholders interviewed for this study complained about siltation in their fishery. Siltation not only reduces the dry season habitat for fish but also encourages those living around a *beel* to cultivate land that formerly was part of a fishery.

Some of the conditions surrounding the issue of leases also influence fishery productivity. Delays in the issuing of leases, as occurred in the case of Nagua-Dholia, Tural and Dhapa *beel*, left too little time for the lessee to carry out any measures that could have increased productivity. These delays were usually connected with demands for bribes to issue the lease, although they can also occur as a result of duplicate issuing of leases and subsequent court

cases. Conflicts over leases, such as were reported in Baro *haor beel*, can also prevent the implementation of conservation measures.

Development was almost never undertaken on the *beel* examined. The current leaseholder of the Barodai Kastuganga Group Fishery, who has had a long history of interest in the *beel*, invested some money in development in the past. In Patasinga *beel*, the only instance where a lease had been issued under a development plan, no development work had been done at the time of the field visit. According to several lessees interviewed, the short-term leasing of *jalmahal* is to blame for this situation. When leaseholders are issued fishing rights for short periods, they are not inclined to take any more than a short-term view of a fishery's productivity. As a result, they confine their investment to protecting their immediate interests, reap what they can under their own lease and, if they bid for the lease again, they are likely to offer a lower fee because the fishery is poorly managed.

APPENDIX

HISTORICAL CHANGES IN THE BANGLADESH LAND LEASING SYSTEM

Introduction of *Zamindari* System by the East India Company

In the 18th century the East India Company, seeking to improve the collection of revenues, introduced a series of land reforms on the Subcontinent. Acting as a representative of the Mughal Emperor Shah Alam, in 1765 the Company obtained the right to collect the revenues of Bengal, Bihar and Orissa. This was done in lieu of those states making an annual payment of Rs.26 lakh to the Emperor. Under this arrangement, the executive and judicial authority remained in the hands of the Emperor's Nawab (governor), but to exercise its right, the Company appointed a local Naib Dewani to oversee collections.

The amount of revenue collected in this manner remained unsatisfactory by the Company's standards and was further hindered by the disastrous famine of 1770. The famine claimed the lives of about a third of the rural population and took vast portions of Bengal out of cultivation.

To further tighten its control over revenues, the Company then removed the Naib Dewani, taking direct control of revenue collection through the appointment of a Circuit Committee. This committee, as the name implies, travelled the countryside. It was charged with settling estates, which it did by leasing them out by local auction to the highest bidders for five-year terms. This process, known as the Quinquennial Settlement of 1772, also proved a failure. In too many cases the bids were speculative, and as the bidders defaulted, the arrears began to accumulate with no prospect of recovery.

Another system, known as the Annual Settlement, was introduced in 1777. This collection method observed the actual paying capacity of landowners and attempted to adjust payments accordingly. Still, there was little improvement in the overall situation and revenue collections continued to languish.

Finally, in 1790, the Company instituted the Decennial Settlement, which placed the burden of collection on local *zamindar* and independent *talukdar*, the hereditary collectors of revenue on the Subcontinent. Under this agreement, each was required to pay a fixed annual amount

of revenue for his estate. Three years later, the Company declared the Decennial Settlement to be permanent, and from that time forward it was known as the Permanent Settlement.

By turning to the *zamindar* and *talukdar* to solve its problems the Company ensured itself of the punctual payment of a fixed, secured amount of land revenue. The Permanent Settlement, although lacking any true regard for those who cultivated the land, recognised that the Company and the *zamindar* had a joint interest in that portion of the land's production that was the traditional property of the State. The settlement fixed the revenue payable to the State at ten-elevenths of the rent assessed—to be realised from the cultivators—and left the remaining eleventh to the *zamindar*. *Zamindar* also were to be given the benefit of any future increase in the value of the State's share resulting from the extension of cultivation or other causes. The State also foreswore increasing their revenue demand based on estate improvements made by the *zamindar*. Further, contrary to age-old tradition, the *zamindar* were declared proprietors of the soil and given all rights to the property on their estates. Revenue payments were declared to be due by sunset on the last day fixed for the purpose and no excuses—not even drought or famine—would be accepted for non-payment. To enforce payment, the Company made the *zamindari* estates liable to be sold at auction for arrears.

The most obvious financial outcome of the Permanent Settlement was that land revenues, the government's chief resource, became entirely inelastic and the benefit of more valuable crops and higher prices mainly went to the *zamindar*.

The Company's promise never to alter revenue encouraged subinfeudation, and the number of tenure-holders grew to vastly outnumber the original *zamindar*. This development severed the connection between the *zamindar* and the *raiyat* and immensely complicated the revenue system.

As a consequence of the Permanent Settlement, *zamindar* became absolute proprietors. While the rights and status of the *zamindar* were fixed and well defined in the Permanent Settlement Regulations, those of the tenants were completely omitted, leaving them at the mercy of the *zamindar*. To make matters worse, the *zamindar* were vested with wide and arbitrary powers of distraint under Regulation VII of 1799. As a result, the tenants were rack-rented, impoverished and oppressed by the *zamindar*.

The tenants gradually became conscious of their extent of their plight and in the 19th century there were agrarian revolts and strife between *raiyat* and *zamindar*. The situation called for government intervention, and gradually a series of tenancy laws was enacted to protect the rights and interests

of the tenants. The most notable of these was the Bengal Tenancy Act of 1885. The act, and its subsequent amendments, gave tenants proprietary rights over their holdings.

Despite these efforts, popular resentment of the Permanent Settlement grew, and demands for its abolition were voiced from political platforms. Pressure to end the system also increased as it became evident that revenue above and beyond what the system could provide was needed for nation-building programmes. To examine all aspects of the matter and make suitable recommendations, in 1938 the Government of Bengal appointed a Land Revenue Commission. This body, under the Chairmanship of Sir Francis Floud, popularly came to be known as the Floud Commission.

Abolition of *Zamindari* System

The Floud Commission, following extensive enquiries and long deliberations, submitted its report in 1940. The majority of its members held that the Permanent Settlement was unsuited to the conditions of time and had ceased to serve any national purpose. The commission therefore recommended abolition of the system through state acquisition of all rent-receiving interests of the *zamindar* and tenure holders, thereby bringing all tenants directly under the government. After the 1947 Partition of India, the Government of East Pakistan (now Bangladesh) accepted the commission's recommendation and accordingly enacted the State Acquisition and Tenancy Act, 1950, which ended the *zamindari* system.

The act accomplished the following:

- State acquisition of all rent-receiving interests in the land, and abolition of the *zamindari* system created by the British under the Permanent Settlement. Provision was made for the payment of a very moderate compensation on a graduated scale ranging from 2 to 10 times the net income of the estate, payable in cash or bond depending on the amount of compensation.
- It made all tenants *malik*, or owners, of their land. This brought them directly under the government, which also reserved for itself rights to subsoil interests.
- It abolished all service tenures and made service tenants full owners of their land.
- It made subletting of land illegal.
- It introduced the principle of land ownership ceilings by limiting ownership to a maximum of 100 *bigha* (33.33 acres). This ceiling was subsequently raised to 375 *bigha* (125 acres).

- It abolished free grants and made all private lands liable to payment of fair and equitable rent.
- It extinguished the *malik*'s interests in his holding only when he died intestate, voluntarily surrendering his holding or abandoning it.
- It prohibited ejecting a *malik* from his holding except upon the execution of a decree by a competent court.
- It abolished private ownership in *hat/bazar*, forests and fisheries and brought them under state ownership.
- It enunciated principles for the distribution of all excess government (*khas*) land to bona fide cultivators. Following the introduction of the ownership ceiling, about 63,000 acres of *khas* land was distributed.

Land Leasing after the Liberation of Bangladesh

When Bangladesh won independence in 1971, the new government carried out the provisions of the State Acquisition and Tenancy Act and amended the act several times in the 1970s. These amendments, discussed in detail below, provided that:

(1) land gained by accession would become government (*khas*) land;
(2) holdings of up to 25 *bigha* would be exempted from revenues;
(3) the land ceiling would be reduced to 100 *bigha* per family;
(4) the original owners' right, title and interests in disputed lands would cease with the loss of that land; and
(5) rent, fees and other charges would be abolished and, in their place, a single consolidated tax would be levied.

Land gained by accession: Presidential Order No. 72 of 1972 changed the legal provision regarding rights to land gained by gradual accession due to the recession of river or sea. The order says that acceded land shall not be considered an increment to the holding or tenancy to which it may be annexed. Instead, the property shall be vested in the government as *khas* land.

Exemption for holding of up to 25 bigha: Presidential Order No. 96 of 1972 exempted all farm families owning land of up to 25 *bigha* (8.33 acres) from payment of revenue. The farmers were also exempted from paying all arrear rents. This was done to give relief to small farmers as well as to increase the productivity of their lands.

The 100 bigha land ceiling: The Bangladesh Land Holding Order of 1972, more familiarly known as Presidential Order No. 98 of 1972, reduced the maximum ceiling of privately owned land from 375 *bigha* (125 acres) to 100 *bigha* (33.33 acres). Families owning more than 100 *bigha* were allowed to select which of their lands they would keep; the excess became *khas* land, for which the government paid a moderate compensation.

Under this order the government took possession of about 146,000 acres of land, a large portion of it unfit for cultivation. Most of the surrendered land was distributed to landless families. Following the government's general policy regarding the settlement of *khas* land, each landless family received 4.5 *bigha* (1.5 acres) of land rent-free. Where a large block of land was available, the government also allotted each family an additional acre of land, but that land had to be cultivated co-operatively.

Diluviated land: Presidential Order No. 135 of 1972 provides that the rights, title and interests an owner or his successors have in land lost by diluviation shall be extinguished and that all such lands shall, upon reappearance, become *khas* land. The order further provides that in the resettlement of such lands preference shall be given to the original owners, or their successors, if the land reappears within 20 years of loss.

Introduction of a consolidated tax: In 1976, the Land Development Tax Ordinance abolished land revenue, cess and other charges that were being levied on land and introduced a single consolidated tax in their place. The ordinance also introduced progressive taxation. Under this law, families owning less than 25 *bigha* of agricultural land are taxed Tk.0.03 per 0.01 acre; families owning more than 25 *bigha* pay Tk.0.15 per 0.01 acre. Non-agricultural land is taxed a much higher rate according to its purpose and location.

In 1984, the Land Reforms Ordinance corrected several deficiencies in the existing body of law.

- The ordinance limits to 60 *bigha* future acquisitions of agricultural land without prejudicing the existing holding sizes.
- It also prohibits *benami* transactions (the purchase or transfer of land in the name of another person to avoid the ownership ceiling), which were widely practised at the time and protected by law.
- Evictions from homestead land in rural areas are forbidden except in cases of lawful acquisition. Thus, the ordinance exempts homesteads from all legal

processes including seizure, distress, attachment or sale by a court or any other authority.

- For the first time, this ordinance recognized the share-cropper (*bargader*) and provided for the protection of his rights under a *barga* contract. The ordinance provides for a three-way distribution of the produce of *barga* land: the landowner gets one-third for his land, the *bargader* gets one-third for his labour, and the remaining third goes to the landowner and *bargader* in proportion to the cultivation costs (inputs excluding labour) borne by each. The *bargader* also has the first right of purchase if an owner intends to sell land covered by a *barga* contract. However, the ordinance restricts the *bargader* to 15 *bigha* (5 acres) of land inclusive of his own land and land held by him under usufructuary mortgage.

While successive governments have attempted to revise the law to improve the lot of the nation's peasantry, many of these measures remain confined to the statute books. This is due, on one hand, to inefficiency and corruption in the bureaucratic machinery and, on the other, to clever manipulation by the rural elite and *jotedar*. The illiteracy and ignorance of debt-ridden peasants—coupled with the expensive process involved in getting relief through the court system—prevents the intended beneficiaries of the law from getting their due. The Government of Bangladesh is continuing its efforts to restructure the land administration machinery and address these problems.

GLOSSARY

amabashya Day of the new moon.

baor An oxbow lake; a cut-off curve or meander of a river. Sometimes completely isolated, sometimes connected seasonally or at one end to the parent river. Also used for old river beds now far from the present course of the river (may also be called a *BEEL*).

barga Share cropping.

bargader Share cropper.

beel Officially, a "back swamp" or depression. Can be either perennial or seasonal. In reality it used for a wide variety of freshwater bodies (oxbow lakes, old river beds, *KHAL*, even artificial channels). Often refers to flooded areas with no obvious deeper section or depression that used to have perennial areas of water.

benami Pseudonymous/anonymous.

bepari *Bepari* is a professional fish trader. He purchases fish from *faria* or fishermen and sells his fish to retailers or other distributors.

bigha A local unit of area most commonly equalling 0.33 acre or 0.14 hectare.

chatai Course mat made of palm leaves or bamboo slips.

gang River; colloquial word for *NADI*. Frequently used for smaller rivers.

haor Depression on the floodplain located between two or more rivers, which functions as a small internal drainage basin.

hat/bazar Daily or weekly market.

hizal/jarul/ shawra Kind of wild tree, used in brushpiles.

jalmahal A "water estate", now referring to any area of khas water body controlled by the government and normally leased out for fisheries.

jotedar Tenure holder

katha Cut branches of trees submerged in *beel* to attract fish.

khara Artificial or natural channel, usually connecting two *BEEL* in the *HAOR*. Specific to the *HAOR* region around Sunamganj.

khas Government owned land.

khal Artificial or natural channel, small river or canal.

khola Temporary fishing ground.

mahajan A very generic but important term that is most commonly used for moneylenders. Effectively it means almost any rich, influential person in rural areas (closer to its literal meaning, "great man"). These people usually lend money as well. In fisheries, it is commonly used to refer to the leaseholder of a particular water body, the owner of or major shareholder in a particular fishing operation. Also used for many ARATDAR who are generally moneylenders in their own right.

malik Proprietor.

mauza The smallest recognised administrative unit. It not the same as a village. Some mauza in the *HAOR* area have no villages in them at all although a *mauza* can cover anything from a single village or hamlet to 12 or more villages.

maimul Muslim traditional fishermen and traditional leaseholders. A caste-like group sometimes extended for bureaucratic convenience to anyone involved in, or wishing to become involved in, fisheries, including leaseholders.

mirasdar Petty landholder.

milad Religious festival

nadi River.

nikari A generic term for fish traders. Occasionally used for Muslims involved in fisheries activities of any kind.

paharadar Guards hired by leaseholders to prevent fishing and theft of fish from *JALMAHAL*. Normally hired for the period from flood recession (October/November) until the completion of harvesting in February or March, but increasingly hired for the whole year to prevent all fishing on leased areas. Usually, but not necessarily, hired from fishing communities. Can become a position of considerable influence as *paharadar* can broker fisheries access for local people behind the leaseholder's backs.

purnima Full moon.

parishad Council.

raiyat Tenant of a piece of agricultural land.

samity Association of people grouped together for a common objective or purpose.

talukdar Owner of a large landed estate.

thana Equivalent of a sub-district or county. Groups together between 10 and 20 UNIONS. Seat of the thana nirbahi committee, which plays an important role in allocating fisheries leases and, under the NFMP, in the identification and licensing of fishermen.

zamindari estate/landed property.