

Property Rights, Livelihoods, and Poverty around some Fishing Grounds in Rural Bangladesh

by

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ABSTRACT

This paper makes a field level investigation into the relationship between poverty, property rights and livelihoods around some heavily exploited fishing grounds in rural Bangladesh. One of the fishing grounds was forcefully 'privatized' by an influential person. We will show that fisheries resources to which the rural poor have traditionally been enjoying their property rights are increasingly facing threats of capture by powerful actors. This process of privatization possibly increased catch to some extent but this was achieved at a high social cost of threatening the livelihoods of a large number of poor fishers.

Keywords: Asia, Bangladesh, property rights, common property, fisheries, institutions.

1. INTRODUCTION

This paper makes a field level investigation into the relationship between poverty, property rights and livelihoods in rural Bangladesh in the context of a heavily exploited natural resource - fishing grounds, mainly *beels*¹ and some *khals* (canals). Several adjacent fishing grounds in the Thana² of Madhupur under the District³ of Tangail had traditionally been open for fishing to people living in its immediate vicinities and beyond. The *Haoda beel* was 'privatized' by an influential person (a Chairman⁴) in the monsoon of 1997 while the *Dhaka Beel* and other neighboring fishing grounds such as the *khals*, remained open for fishing.⁵ We observed that it was relatively the fertile *beel* that was privatized and attempts were made to make it more productive by converting it to a closed water body and by re-stocking it with fish. Consequently a large number of fishers lost their traditionally held rights over the *beel*. Social power and an integration of national and local level politics rather than any genuine collective resistance from the part of the fishers played an important role in reversing the property rights structure and the *beel* was finally turned to open access. The events around the fishing grounds therefore integrate the relationship between property rights (the institutional change brought about by privatization), livelihoods (small-scale fishing) and poverty in rural Bangladesh. This paper makes an attempt to understand this process of privatization in terms of the linkages that define this relationship in a broader political context.

We will explain this relationship as two sets of interfaces (Figure 1). The first interface (the shaded boxes) relates poverty to sustainability of fishing grounds. While poverty drives more and more people to the fishing grounds the sustainability of the resource is threatened and this in turn increases poverty. The second interface relates income inequality to access rights to fishing grounds. Income inequality results in increase in fish culture in various forms and therefore lead to the reduction of access rights of the fishers to traditionally held fishing grounds. The reduction in access rights in turn increases inequality. Thus the livelihoods of those involved in small-scale fishing are threatened by poverty and sustainability of the fishing grounds on the one hand (the first interface) and income inequality and access rights on the other (the second interface). Both these interfaces are therefore self-expanding and forms a vicious circle under increasing demographic pressure and changing property rights. The entire process - as we will show - is also embedded within an integration between village and national level politics where social power play an important role.

We picked up a group of fishers – the main stakeholders – who are scattered almost all around rural Bangladesh - particularly during the monsoon. They can only afford to buy inexpensive fishing gears and they are constantly involved in searching for fishing grounds - from small ditches to even a mighty river. It was these fishers whose livelihood was

particularly threatened by the privatization of the *Haoda beel* and this was what might be called the 'talk of the village' while we were conducting the fieldwork. But there is a whole gamut of literature that supports privatization as a means for solving many externality problems.⁶ It is argued that privatization increases catch but never seriously questions at what cost? The privatization of the *Haoda beel* has provided us with the opportunity to address this issue as well. We will show that resources to which the rural poor have been traditionally enjoying access rights are increasingly under threat of capture by dominant powerful agents who are least dependent on the resource for pursuing their livelihoods.⁷ This process of privatization possibly increased catch to some extent but this was achieved at a very high social cost of threatening the livelihoods of a large number of poor fishers. The livelihoods of these displaced people can become unsustainable if these privatization schemes gather sufficient momentum and alternative livelihoods paths become unavailable or become severely restricted. The author's personal observation of the privatization process, key-informant information and a questionnaire survey of 72 fishers who fished in these fishing grounds will substantiate the arguments.

Section 2 describes the data and fieldwork design. While section 3 provides a description of the fishing grounds some basic information about the fishers are described in section 4. The two interfaces are substantiated in Section 5. The events (political as well as others) that led to the abortive privatization of the *Haoda beel* are described in section 6. Section 7 quantifies the effects of privatization. Finally, section 8 concludes the paper. Abbreviations and glossary of local terms are included in the appendix for quick reference.

2. DATA AND FIELDWORK DESIGN

The privatization of the *Haoda beel* started in the second week of August, 1997. Two Research Assistants were permanently stationed in Madhupur and they prepared notes on the development in the *Haoda beel* and its repercussions in the study villages. The author made field visits almost every other week and made his observations and prepared his notes. Together they provided a very important source of information. At one point it was felt that the effects of privatization of the *Haoda beel* had to be quantified in terms of its effects on the livelihoods of the rural poor living in the study area who were dependent on this resource. It was also realized that the privatization scheme of the Chairman was likely to be a failure given the role of the civil administration and the politicization of the event in which the members of the ruling political party were involved. Thus we surveyed some fishers who we thought would not be denied access to the *Haoda beel* when the privatization process would end. Thus we started to interview fishers from the other fishing grounds located in our study area. When the privatization scheme failed we surveyed mostly those fishers who were mainly fishing in the *Haoda beel*. The questionnaire gathered information on catch, type of fishing gear, and on overall conditions of fishing (such as trend in catch or in rights of access to fishing grounds). The sample consisted of 72 fishers who were randomly picked from the fishing grounds.

3. THE FISHING GROUNDS

Most of the fishers in the sample fished in the controversial *Haoda beel* and the *Dhaka beel*. So we will concentrate more on these *beels*.

The Haoda Beel

This *beel* is mostly located in No. 9 Arankhola Union in the Thana of Madhupur. From the

Thana Headquarters it is about two and a half kilometre away in the Northeast direction. It is said to have originated from a narrow canal originating from a small river called The *Khuru*. This is a seasonal *beel*, which means that for a large part of the year it remains dry. The level of water is at its maximum during the Bengali months of *Ashar* and *Sraban* (corresponding roughly with June and July). The water usually starts to arrive in the month of *Joistha* (around May) and remains in the *beel* till the end of *Katrik* (October). The *beel* is about a square kilometre in area (Table 1) of which 20% is alleged to be *khas* (or land owned by the state). In the dry season HYV boro is cultivated in about 68% of the *Haoda beel*. However in the elevated parts, Aman is also cultivated in about 38% of the *beel*. The level of water is about 15-20 feet high at its maximum. The *beel* is believed to be extremely fertile and does not require any fertilizers, mechanized irrigation or pesticides for the cultivation of boro.

Table 1: A Comparative Description of Haoda and Dhaka Beels

Features	Haoda Beel	Dhaka Beel
Area (in sq. km)	1	.47
Area under boro crop (%)	63	91
Area under aman crop (%)	38	48
Depth of the deepest part when the level of water is at its maximum (in foot)	15-20	5-6
Percentage of land owned by the largest owner	16	43
Linked to any canal?	Yes	No

The Dhaka Beel

The *Dhaka beel* is located in Jatabari village under the Madhupur Sadar Union. It is less than a kilometre away from the Tangail-Mymensingh highway. The area of this *beel* is less than half of a kilometre (Table 1). The *beel* is not as deep as the *Haoda beel*. When the water level is at its maximum the deepest part of the *Dhaka beel* is about 5-6 feet high. Thus there is not enough water in this *beel* and unlike the *Haoda beel*, Aman is cultivated in about 48% of the *beel*. One important aspect of this *beel* is that almost 50% of the land in the *beel* is owned by a person named Lal Mia Chairman. This *beel* is not linked to any canal though it is sometime fed by the overflow of water from the *Nagar Khal*.

The Khals

There are two important *khals* in the study area. They are the *Gujar* and *Nagar khals*. The *Gujar Khal* passes through Biprabari, one of our study villages, in the south-north direction and meets with the *Haoda beel*. On the other hand, the *Nagar khal* is stretched in the west-east direction and meets the *Haoda beel* from Jatabari - another village under study. Both these *khals* are almost dry during the boro season. The villagers have come to an agreement on who 'owned' which part of the *khal* in the dry season through a long process of historical conflict and resolution. The land is extremely fertile and no major irrigation is required. We have been reported that the dry season area of the *khal* from the bridge on the Tangail-Mymensingh highway to the start of the *Haoda beel* is around 3000 decimals. About 900 decimals is the dry season *khal* area that still remains under water under normal conditions.

It must be noted that the fishing grounds are mainly temporal and the fish available there do not have high commercial value. Dry season land within the fishing grounds are either owned privately or (de jure) by the state. Property rights over the fishing grounds become

relatively complex in the monsoon.

4. THE FISHERS

Some basic information about the fishers will be useful for following our arguments. The fishers were generally very young - more than 60% of them was less than 30 years in age. Fifty-seven percent of them received no education at all. Among those who received some education, the average year of schooling was about three.

They mainly fished in the *beels* (59%) and in the *khals* (34%) where access was generally open. The fishers did not have to pay any fee for access rights to the fishing grounds where they fished. Sixty-two per cent of the fishers fished most in Dhaka and *Haoda beels* (Table 2). However, altogether they fished in as many as 25 different fishing grounds.

Table 2: Distribution of the fishers by fishing grounds

Fishing Grounds mostly used	Frequency	Percentage
Dhaka Beel	24	33
Gujar Khal	13	18
Haoda Beel	21	29
Nagar Khal	9	13
Others	5	7

Sixty four percent of the fishers used either a cast-net (*toira jal*) or a push-net (*thela jal*). The fishers did not generally use multiple fishing gears. Only eleven respondents used at least two types of fishing gears. Of them, two respondents used 3 gears. Thus most (85%) of the fishers used one type of fishing gear.

Note that there are substantial differences between cast and push nets and between those who use them (Table 3). The average purchase price of a cast-net was Tk. 630 and that of push-net was only Tk. 17 (average present values of these gears were respectively about Tk. 396 and Tk. 6 only). Note also that the push-net fishers consumed all the fish they had caught. They were therefore involved in subsistence fishing. On the other hand the cast-net fishers set aside only 14% of their catch for home consumption. They were therefore mainly commercial fishers. However, the push-nets had larger catch per unit of effort because they were operated for lesser hours. Note also that the cast-net fishers travelled as far as one and a quarter kilometres (Table 3) to catch fish whereas the push-net fishers travelled only .65 kilometre. These indicated that the cast-net fishers were mainly commercial fishers, they caught fish for longer hours, and they moved to relatively distant areas for fishing. On the other hand the push-net fishers were subsistence fishers, they caught fish for shorter hours and they did not travel far in search of fishing grounds. This is one dimension of heterogeneity amongst the fishers.

Table 3: Misc. information

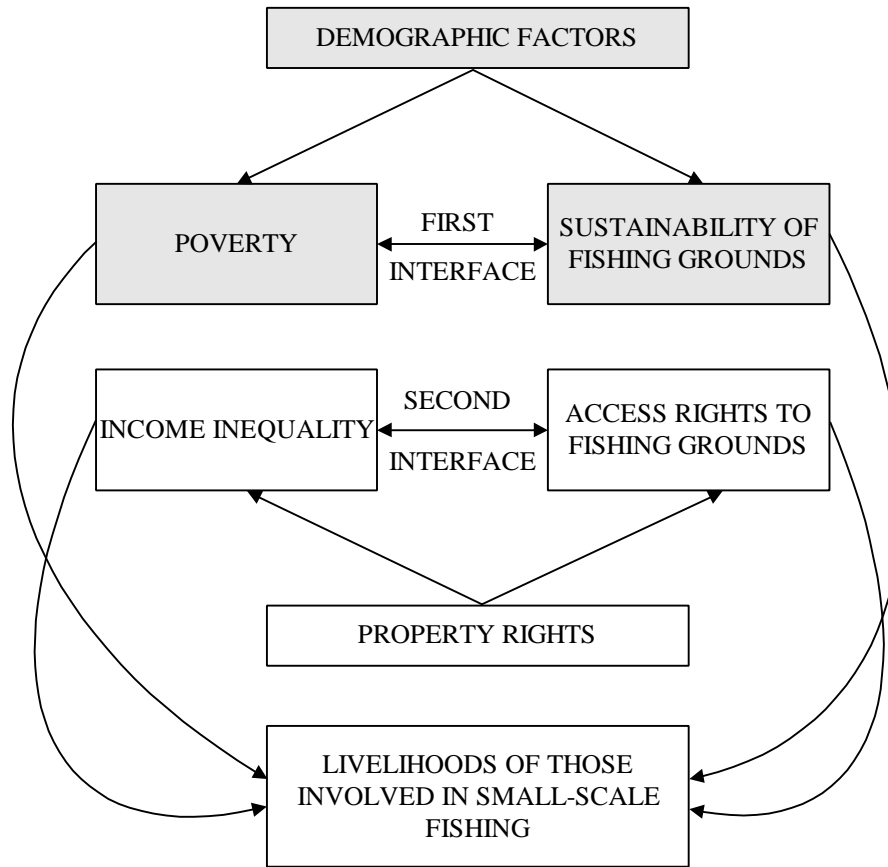
Gear	Purchase Price of fishing gear	Present Value of fishing gear	Percentage of catch consumed at home	Catch per Unit of Effort	Distance of mostly fished fishing spot from residence (in km)
Cast net	630	396	14	.35	1.23
Current jal	440	212	33	.66	.80
Heavy lift net	500	1500	13	.13	.50
Hook and line	18	9.75	100	14.35	1.50
Lift net	208	108	100	1.44	.70
Push net	17	5.95	100	8.37	.65
Traps	801	214	55	408.23	.50

Most of the rural people is involved in a portfolio of livelihoods. About 90% of the fishers had at least two sources of livelihoods and 25% of the fishers had at least three sources of livelihoods. Together they pursued at least twelve categories of livelihoods. About 32% of the fishers identified fishing as the main source of their livelihood. Among those who had two sources of livelihoods, 57% referred to fishing as their secondary source of livelihood. Among those who had three sources of livelihoods, 44% referred fishing as their tertiary source of livelihood. Thus to most fishing was the secondary source of livelihood. We also observed that about 26% of the fishers were also involved in own farm work as their main source of livelihood. Twenty-one percent of the fishers were students. Those who did not fish every day during the reference week, 70% of them spent their time pursuing alternative livelihoods. Thus we see that these fishers pursued diverse portfolio of livelihoods for survival.

5. PROPERTY RIGHTS, LIVELIHOODS AND POVERTY: THE INTERFACES

The relationship between property rights, poverty and livelihoods in the context of exploitation of fisheries resources is explained through two interfaces in Figure 1. We will describe the interfaces first and then provide evidence to establish their empirical validity in our study area.

FIGURE 1: POVERTY, PROPERTY RIGHTS AND LIVELIHOODS



Poverty and Sustainability of the Fishing Grounds: The First Interface

The first three boxes from the top that are shaded define the first interface. Poverty and poverty related factors affect sustainability of fisheries resources through unrestricted entry. Note that it is not necessarily the stock of fish that declines but it may very well be the case that a given stock is shared by more and more people. When sustainability of the fisheries resources is affected it also accentuates poverty. This is the basic argument put forward by those who believe that most of the rural poor live in biomass-based economics (Dasgupta and Mäler 1994) where the sustainability of the biomass affects the sustainability of the livelihoods of the rural population, particularly the poor. When the livelihoods of the rural poor are therefore threatened they make things worse by adversely affecting the quality and quantity of the biomass. Note that this interface is affected by demographic pressures as shown by the first shaded box. Thus, poverty and sustainability of fishing grounds affect the livelihoods of those involved in small-scale fishing. We now provide empirical support for the first interface.

Almost all the fishers agreed that their number had been increasing over the last five years. But increase in fishing pressure was not entirely profit-driven. Only 8% of responses (4% attributed to higher price and another 4% attributed to higher income) related increasing fishing pressure to profit motives (Table 4). Lack of work (4%) and poverty (36%) had been

identified as the main driving force. Fifty-two percent of the responses identified demographic factors as an explanation.

Table 4: Reasons put forward by the fishers about increasing fishing pressure

Reasons	Responses	Percentage
Higher price of fish	3	4
Demographic factors	39	52
Lack of work	3	4
Poverty	27	36
Higher income	3	4

Almost all the fishers thought that the amount of fish had been declining in the places they were fishing over the last five years. We see in Table 5 that about 75% percent of the responses accrued this to the use of destructive fishing gear (36%) and overfishing (39%). The rest was related to environmental factors such as inadequate flood (20%) and fish diseases (3%) and the like. Thus to a large extent the fishers identified themselves as the main actors responsible for dwindling stock of fish in the fishing grounds. These responses - to a large extent - validate that the interface between poverty and the extent of sustainability of natural resources form a two-way causation (Reardon and Vosti 1995) and both affect the livelihoods of the fishers. While poverty may increase entry, such entry also accentuates poverty because the resource base is heavily exploited in the process or the resource base is degraded by external factors. This interface is further accentuated by demographic factors.

Table 5: Reasons mentioned by the fishers about decreasing availability of fish

Reasons	Responses	Percentage
Destructive fishing gear	29	36
Fish diseases	2	3
Cultivation in fishing grounds	1	1
Inadequate floods	16	20
Lack of plants in khals	1	1
Overfishing	31	39

Income Inequality and Access Rights to Fishing Grounds: The Second Interface

The three unshaded boxes following the first three shaded boxes constitute the second interface. It relates income/asset inequality to rights of access to fishing grounds. Income inequality in this context related to the effects of various forms of culture of fish (for example culture of fish in paddy-fields) in a variety of fishing environments. Culture of fish is generally capital intensive. As relative value of fish increased, rights of the small fishers to traditionally held fishing grounds were gradually curtailed. It is generally the rich who took most of the opportunity from fish culture because it required ownership of land and other assets. When access rights were curtailed, the fishers had to fish either in fishing grounds of inferior quality or in fishing grounds that were already crowded. The second interface is cemented by various forms of property rights configurations - legal (for example, the right to culture fish in paddy fields) or illegal (for example, the Chairman's privatization of the *Haoda beel*). Thus income inequality and access rights to fishing grounds affected the livelihoods of

the rural poor who were involved in small-scale fishing. We now provide empirical support for the second interface.

More than a three-quarter of the fishers thought that less and less fishing ground was available for fishing. When asked why fifty-six percent of the responses related filling up of the *beels* (25%) and cultivation of paddy in areas that used to be fishing grounds (31%) as the important factors behind the decrease in the availability of and access to fishing grounds (Table 6). Note that 44% of the responses identified increase in fish culture that reduced the size of the area of the fishing grounds where access had so far been open. They particularly pointed out cultivation of fish in the paddy fields which was increasingly gaining popularity in our sample villages along with culture of fish in ponds.⁸

Table 6: Reasons put forward by the fishers about decreasing rights of access to fishing grounds

Reasons	Responses	Percentage
Filling up of beel	15	25
Fish culture	27	44
Paddy cultivation	19	31

Thus a major source of threat to livelihoods in terms of access rights is arising from the sustainability or in this case degradation of natural resources (filling up of *beel* and paddy cultivation) and institutional change brought about by increasing fish culture as a response to relative price change (North 1981;1990).

When asked whether the fishers were prohibited from fishing from any fishing ground, more than one-third of them answered in the affirmative. Note that the fishers were likely to be prohibited from fishing in places where they did not expect such prohibition in the first place. They generally went for fishing in places where they thought they were least likely to be prohibited. Keeping this in mind we have found that of those who were prohibited from fishing, more than two-third of them were prohibited from fishing because they went to fish in fishing grounds where people were involved in fish culture. They were also prohibited from fishing because they came from far away and were using destructive fishing gear such as the current jal. A current jal is a gill net with fine mesh that gills fry and fingerlings. This gear is banned because it is detrimental to the growth of fish stock.

Thus our findings suggest that the livelihoods of the fishers were threatened by the profit motives of the rich and powerful who were either cultivating rice in places that used to be fishing grounds or were restricting access to lands where fish is now cultured. On the other hand their livelihoods were also threatened by poverty amidst increasing demographic pressure. The subtle difference between interfaces one and two is that in the former it was the poverty of the fishers that was making their livelihoods threatened in a situation of increasing demographic pressure while in the latter it was the relatively well-off people who were making the livelihoods of the fishers threatened by restricting their traditionally held rights of access to fishing grounds. The events leading to the privatization of the *Haoda beel* and its subsequent failure has to be seen within this perspective.

6. THE PRIVATIZATION OF THE HAODA BEEL

We witnessed many crucial aspects of pursuing livelihoods by the poor as they relate to

access to and exploitation of natural resources in the course of our fieldwork during August-September, 1997. The centre of the story was the *Haoda beel*. This *beel* was turned to a closed water body by erecting *bandhs* (water control structures) at three crucial points: Kamarchala in the north, *Nagar khal* in the west and the *Gujar khal* in the south. The Chairman of Kakraid⁹ - a supporter of the opposition Bangladesh Nationalist Party (BNP) - mobilized a section of people in this venture. He formed a co-operative consisting of those who contributed towards the cost of stocking and guarding of the *beel*. Reportedly, about a thousand individuals became members of the cooperative. A person had to reside within a kilometre from the *beel* for being eligible as a member of the cooperative. The membership fee was fixed at Tk. 105 per person.

There had been frequent dissemination of the stocking programme initiated by the Chairman through 'miking'. People were repeatedly asked not to fish in the *Haoda beel*. We witnessed a large number of water-bailiffs patrolling the fishing ground to establish and strengthen the rights of the so called cooperative over the *Haoda beel*. It was reported that only a few who held land in the *beel* became members of the cooperative. The villagers living around the *beel* was sharply divided on the issue of fish culture in *Haoda beel*. Here are the arguments of those who did not like the idea:

- a. the Chairman was corrupt and not trustworthy (he allegedly cheated the villagers by promising them to legalize the *khas* land that they held illegally and the Chairman grabbed about Tk. 700,000 from this without keeping up to his promise)
- b. the ulterior motive of the Chairman was to show to the government the profitability of fish culture in the *Haoda beel* and thereafter lease in the *beel* in the future if the government declared it as a fishery that can be leased out
- c. a large number of poor people who used to catch fish either for sale or for home consumption had been deprived of their traditionally held rights
- d. this was a ploy of the Chairman to eventually grab the land in the *beel* owned by others
- e. the Chairman would ultimately create permanent *bandhs* and the owners of land in the *beel* would not be able to cultivate rice
- f. the Chairman would catch and sell all the fish
- g. the Chairman did not at all stock the *beel* because there was already a natural intake of fish in the *beel* that would grow in biomass if not allowed to pass through the *bandhs*

While some of these allegations had some basis while others had not. Moreover, these were guesses arising out of uncertainty of the events. The privatization of the *Haoda beel* was something totally new to the people living in its neighborhood and they were still unsure about the outcome. We also made the following observations:

- a. the issue was politicized along the BNP-AL division. BNP or the Bangladesh Nationalist Party is the main opposition political party and AL or the Awami League is the ruling political party. The local AL arranged a meeting where they gave an ultimatum to the Chairman to stop culture of fish in the *beel*. They declared and enforced a general strike in Madhupur and went through a media propaganda which a villager succinctly referred to us as 'papering'!

- b. the really poor were, of course, affected.
- c. this was a case where a resource was created from profit motive and supports North (1990)'s statement that institutional change is brought about by a change in relative price (production of rice was increasingly thought to be unprofitable). But note that the change in relative price was not enough. Social and political power glued to a nexus of local and national politics were also necessary for bringing about the institutional change.¹⁰
- d. the *beel* was actually stocked but the size and value of the stock was anybody's guess.
- e. the repercussions of the tense situation in *Haoda beel* had been explicitly felt in the neighboring *Dhaka beel*. People thought we were there to assess the possibility of stocking during some of our visits. Already rumor had it that Lal Mia Chairman (who owns about half of the land in *Dhaka beel*) might go for a stocking following the footsteps of Zakir Chairman.
- f. the Chairman did try to give a co-management type of color to the privatization process by forming the co-operative. Many natural resources in a rural setting are *de facto* thought to be open to all and therefore such community character of rights over resources are apparently maintained even when an individual firmly establishes *de facto* or even sometimes *de jure* rights over them.

Given these facts, opinions, and observations what become apparent is that the privatization of *Haoda beel* did affect the interest of many in many different ways. The people who held land in the *beel* thought their rights were attenuated, those who were using large and expensive fishing gears thought they were never going to get back these rights. But the cost (livelihoods of the poor being threatened) such privatization imposed on the small fishers was disproportionately highlighted by a section of the population for their narrow self-interest and the local politicians did not miss this opportunity. Note that the poor fishers could not organize, it was the relatively rich and wealthy who got organized. Ironically, the change in property rights structure was brought about by disorganizing the poor – not by organizing them. One can very well question who were the puppets and who the puppeteers.

Politicization of Privatization of the *Haoda Beel*

A section of the fishers were supported by the ruling AL party whereas the Chairman was supported by the BNP, the main opposition party. There were two influential households coming from outside our survey villages who played a crucial role against the Chairman. The Chairman prohibited them from fishing after stocking the *beel*. They owned and operated about five seine-nets and they also financed purchase of seine-nets by other households. They had collaborated with Fazlu, a local leader of the Awami League, in order to regain control over the fishing ground. Thus, the small-fishers were hardly the active agents behind the change. These rich and influential people played a vital role in gearing up the resistance against the Chairman. Obviously, they got the partial support of those who were also left out - the small-scale fishers. Thus the rural poor was divided also on political lines and the division was based on the issue of privatization of the *Haoda beel*.

Finally the Chairman had to give in to the pressure created on him by the government and the bureaucracy on 8 December, 1997. The supporters of the AL arranged fishing on the northern side of the *beel*. On December 7, the news of removal of any barrier to entry to the *beel* was announced by the supporters of the AL through 'miking' at several important places. Police came on a motorized boat. They gave outright support to the supporters of the AL. The police requested the AL supporters not to fish, but in a very passive way. They then

moved to the other side of the *beel* where the supporters of Zakir Chairman were waiting. By that time a large number of fishers with a variety of fishing gears started rampant fishing in the northern side of the *beel*. The police refrained the supporters of the Chairman from retaliating and passively observed the rampage done by a large number of people. The police was still waiting till we left the scene after observing the events for several hours. The biased presence of the police, however, prevented a possible bloodshed. But this breaking of the rules (i. e. entry to fishing ground) raised several issues:

i. we noticed that the fishers had to leave the fishing spot early not because of any threat from the Chairman but because there was not enough fish. This possibly implied that the Chairman did not stock enough fish. It was also argued by some that the fish took refuge in the deeper part of the *beel* where the Chairman enjoyed strong control. Others argued that all the fish had been already caught and sold by the Chairman.

ii. about three-fourth of the fishers came from as far as five miles away from the *Haoda beel*. The participation of a small number of fishers from the neighborhood reflected the politicization of the event and it also reflected that opinion about the motive of the Chairman was very much divided.

iii. it should be noted that the process of privatization was not stopped by the small fishers but by the involvement of those who were not fishers. In a sense the small-fishers remained on the sidelines. The controversy and the tensions that developed in the area were created and exacerbated by narrow factional politics that exploited and crudely rationalized the threat on the livelihoods of the poor fishers.

7. THE EFFECTS OF PRIVATIZATION OF THE HAODA BEEL

We have seen how the livelihoods of the rural poor were threatened by the interaction of four important factors: poverty, sustainability of fishing grounds, income inequality and access rights to fishing grounds. These factors are interlinked by the underlying political system. Given this context within which the privatization of *Haoda beel* was done, we will now make an attempt to assess the effects of privatization.

Table 7 captures the effects of *Haoda beel* in terms of catch per unit of effort (CPUE) in a limited way. CPUE is a standard category used in fisheries economics to measure the productivity of fishing gears used in catching fish. We have reported only the cases of cast-nets because of comparability as information on other gear was not available. In this paper we have measured effort by multiplying the area of cast nets by total hours of fishing in the reference week.

Table 7: Catch per unit of effort for cast net under different property rights arrangements

Indicators	All fishing grounds, access restricted in Haoda Beel	Only Haoda Beel when access made open	Other fishing grounds when access to Haoda beel made open
CPUE	.32 (9)	.34 (11)	.44 (3)
Average hours of fishing per week	30.22	38.90	35

Note: Figures in brackets represent sample size

We have considered three environments or scenarios: *first*, the case when access to all fishing grounds was open to the fishers except for to the *Haoda beel* (the first column of Table 7), *second*, the case when a selected number of fishers were only fishing in *Haoda beel* after it was turned to open access (the second column) and *third*, the case when fishers were fishing in fishing grounds other than the *Haoda beel* when access to the latter was made open (the third column).

After the *Haoda beel* was made open CPUE was found to be slightly higher than that in other fishing grounds when access to the *Haoda beel* was restricted. This could have been caused by the so called privatization. But the difference is marginal and we have to take into account of the opinion of the people living in the study area that the *Haoda beel* was the most fertile amongst the neighboring fishing grounds. CPUE in the other fishing grounds after *Haoda beel* was turned to open access was, however, higher. Another important thing that we notice in Table 7 is that hours fished per week in *Haoda beel* increased substantially when it was made open. Thus there is evidence to support the proposition that privatization restricts access and increases CPUE. But the extent to which catch increased was no match to the extent to which access was denied to the fishing ground. This aspect of the costs of privatization is generally ignored in the literature. Approximately, an increase in CPUE of 6% was brought about by a decrease in fishing hour by 29% per week. This estimate is based on the assumption that average hours of fishing when access to the *Haoda beel* was restricted would have been the same as compared to the situation when the *beel* was made open access. That is the extra hours of fishing in the *Haoda beel* after it was turned to open access would have gone to the same *beel* if it were open. This rather highlights the point that the sustainable yield function is likely to be flatter for the type of environment we were studying. Similar findings have been reported in other studies dealing with very similar environment (MRAG 1994; FAP 17 1994). For example, MRAG (1994) have found that the yield curve widened, and possibly flattened, by the natural resilience of the multispecies fishstocks in a fishing ground called *Hail Haor*. Thus the effects of privatization were threatening to the livelihoods of the rural poor while the effects on catch had only been marginally higher. The biology of *beel* fishery seems to be such that the marginal gains from privatization is likely to be attained at a very high social cost of depriving the poor from pursuing their traditional livelihoods.

8. CONCLUSIONS

This paper has described the political and economic processes that are seriously threatening the livelihoods of a certain group of people: the small-scale fishers. *At a more general level* poverty, income inequality, sustainability of and access to fishing grounds are the important determinants of the conditions of the rural poor who are pursuing this livelihood. Changes in demographic factors and property rights along with the political processes (both local and national) within which this livelihood is pursued indicate that unless alternative livelihood strategies are identified and pursued poverty in the rural areas of Bangladesh is likely to increase over time. *At a more specific level* we have identified an increasing trend in restricting rights of access of the rural poor to resources on which their livelihoods were deeply anchored. The case of privatization of the *Haoda beel* proves our point that it is the relatively resource rich households who are extending their control over resources traditionally held by the poor. Though privatization of natural resources such as fishing grounds is believed to increase efficiency, its equity aspect is rarely emphasized. In this paper we have argued and established that the efficiency gain may be insignificant relative to the social loss associated with restricted fishing rights. If restricting effort for increasing catch is required in a given environment then one should look at the possibility of the fishers designing and enforcing such restriction.

APPENDIX

ABBREVIATIONS AND GLOSSARY OF LOCAL TERMS

AL: Awami League, the ruling political party.

Beel: A beel is a small lake, a deeper portion in a low-lying natural depression area, a permanent body of water in a floodplain or a body of water created by rains or floods that may or may not dry up in the dry season.

BNP: Bangladesh Nationalist Party, the major opposition party.

District: A higher administrative unit comprising of Thanas.

Khal: Canal.

Khas: State owned land.

Taka (Tk.): The name of Bangladeshi currency. \$ 1= Tk. 50 (approx).

Thana: Smallest administrative unit which is also called a police station.

Union: A Union is comprised of several villages and several Unions make a Thana.

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Endnotes

¹ A *beel* is a small lake, a deeper portion in a low-lying natural depression area, a permanent

body of water in a floodplain or a body of water created by rains or floods that may or may not dry up in the dry season (see Toufique 1996). See the abbreviations and glossary of local terms in the appendix.

² Smallest administrative unit which is also called a police station.

³ A higher administrative unit comprising of Thanas.

⁴ A Chairman is an elected head of a Thana or Union. A Union is comprised of several villages and several Unions make a Thana.

⁵ Note that freshwater fish is a major source of animal protein for poor households in rural Bangladesh (Asaduzzaman and Toufique 1997), particularly for lactating mother and children (Minkin *et al.* 1997). Therefore curtailing rights to fishing grounds imply curtailing rights to a cheap source of animal protein for a vast majority of rural poor, particularly women and children.

⁶ See Toufique (1996) for a review of the literature. While a simplified scheme of the problem of internalization of externalities can be found in Ostrom et al. (1994), Toufique (1998) discusses how the agents attempted to internalize these externalities in the context of the inland fisheries of Bangladesh.

⁷ Similar observation exists for other forms of fishing grounds in Bangladesh, See Toufique (1997).

⁸ Institutional constraint of joint ownership of ponds on culture of fish in Bangladesh (See Khan 1985) is increasingly becoming a history. In Madhupur people were getting more and more inclined to the culture of fish in the ponds and they were doing that under various contractual arrangements.

⁹ Kakraid is one of the neighbouring villages along the *Haoda beel*.

¹⁰ It is for this missing political dimension Eggertsson (1990) has described these theories as naive theories of property rights.

