Riparian right and colonial might in the *haors* basin of Bangladesh

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Abstract

Bengal, comprising Bangladesh and the Indian state of West Bengal, is one of the worlds largest delta's, fed by two major rivers and countless smaller ones. It is thus a natural laboratory for studying riparian commons. The paper addresses aspects of local aquatic resource management, traditional and modern, and draws some tentative conclusions for current development efforts.

On the physical level, the processes that have formed and are continuing to form the delta are described. On the human level, the settlement history of the delta, including the process of transforming the physical landscape in order to increase agricultural productivity, is addressed. The importance of the British colonizing power in terms of enclosure of the riparian commons is discussed.

A case study from the *haors* (large perennial water bodies) area, based on anthropological field work in the mid-1980s and complemented by archival research, addresses the evolution and present situation in terms of local access to haors and other water bodies. Riparian commons, as they evolved, were overtaken by the expanding nation-state that established state property regimes, so-called *khas* land, throughout the area. *Khas* land, which includes haors, was open to everybody through a leasing system. In many places such *khas* land became, in effect, controlled by elites, thus barring access to the large majority of local people most of the year, and then only through costly sub-leases. The paper aims to understand the characteristics of present-day riparian commons in the study area through analyzing the settlement history, as well as the evolving relationship between local culture and natural endowments.

The accumulating knowledge of riparian commons in Bangladesh have potential practical implications. It can: (i) serve as models for efforts to establish viable and equitable fisheries management regimes, (ii) be a source of motivation and empowerment, and, (iii) function as a foundation and point of departure for participatory approaches. Towards this, selected large-scale water management schemes are discussed. Likewise, efforts to increase the productivity and sustainability of fisheries through involving local people and giving them use rights to local water bodies are addressed. The long-term goal of much of this work is to support or create local riparian commons.

1 Introduction

The paper presents some aspects of riparian commons (RC)s in Bangladesh. Towards this, it addresses information on settlement history, the mode of production, the relationship between local culture, social organization and natural endowments, and the evolving dialectic between the local level and the larger socio-political context. The paper aims to contribute to a broader study, theoretically and applied, of RC.

1.1 Points of departure

A focus on RC was evident early on in British colonial administration (possibly also in the case of other colonial powers). This can, at least partly, be traced to a

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long-standing concern with commons in the intellectual and political history on the British Isles (cf. e.g. Warr 1649). The rationale was one of furthering water-borne trade, its context was the expanding control over natural resources as well as the colonial expansion, and its means were, initially and also primarily, engineering, technology and economics. Other disciplines contributed, including public administration, and law (cf. e.g. Round 1859). The emerging concern with RC, albeit showing the narrow interests of the upper classes (e.g. in the emphasis on angling), did provide the foundation for a more thorough approach to local and/or cultural aspects of such commons. The framework that gradually emerged was in large measure orchestrated and validated by the profession of jurisprudence. Increasingly all-embracing, it also gave attention to the local level, while not loosing sight of the overriding goal. The experiences provided by expanding this framework to the colonies, and building up bureaucracies and administration founded upon these principles, were fruitful. Thus a concern with RC in British India, for example, included, at least on the ideal and normative level, a concern with local circumstances (never mind that the ultimate goal was to understand how such knowledge could be used to ease and facilitate incorporation into the expanding colonial state (cf. Doss 1891).

In the early conception of the colonial administration, the concept of RC implied, a priori, state or public commons (local RCs, if acknowledged or known, were not given much attention). The broad conception of the colonial state's interests in RC gradually became narrower. In today's post-colonial situation, to the extent that any attention is given to RC at all, it is only focused on revenue generation.

This pronounced macro level focus is, perhaps, one reason why a concern with local, traditional RC has not developed. Other reasons may have to do with the long-standing emphasis on marine aquatic environments, with marine/coastal fisheries and with coastal zone management. As a result, freshwater aquatic environments, including the RC found in these aquatic ecosystems, have largely gone unnoticed. When it comes to cross-cultural and comparative work nothing has been done. The purpose of the present paper is to contribute to constituting the concept of RC; this time not from the point of view of the state (whether post-colonial or not), but from the point of view of local resource users, and the local level.

There are both theoretical and applied/practical reasons why this focus is long overdue. On the theoretical level we need to understand more about the cultural specificity of RC, as well as their cross-cultural variability. Such knowledge will, in turn, feed into applied work aimed at the mutually supportive sustainable development goals of protecting freshwater aquatic biodiversity and supporting local people and their aquatic-based livelihoods.

1.2 Framework

The paper is a contribution to the study of RC from the point of view of the logic and rationality of (aquatic) natural resource management, as inherent in and realized by different management systems. These management systems are public sector, private sector and civil society/NGOs.

1.2.1 Approach

To study and understand RC as proposed, it is necessary to learn about how they evolved, and how they functioned in a situation prior to their change or demise (admittedly, this is often easier said than done). Thus, a historical approach is necessary.

RC are institutions, in the sense of institutional economics. In the context of legal pluralism, such institutions are relevant objects of study and concern. Conversely, a concern with law and natural resource management will help further the understanding of traditional RC, as well as their incorporation and use in present day management approaches (Berge and Stenseth 1995; Iliopoulou 1994; Lindsay 1998; Spiertz and Wiber 1996).

The generic management alternatives of approaches that has evolved, in India and elsewhere, including public sector management, private sector management, local community-based management and open access, will be understood in terms of their underlying rationality

A broader approach to studying and working with RC is presented by Community-Based Natural Resource Management (CBNRM). As an approach to working with natural resources, CBNRM is a third alternative to 'command and control' and 'market-based' solution. The approach consists of three key elements, including organizing effective community-based groups, creating effective linkages between the public sector, the private sector and community-based groups, and establishing an enabling policy and institutional environment (World Bank 1999).[2/]

1.2.2 Time and space

In terms of addressing RC in India, only a small slice of the reality, in terms of time and space, will be presented and discussed. In terms of time, the emphasis will be on the British period (specifically the mid-19th century) as well as the present time. In terms of space, the *haors* basin in the northeast of Bangladesh will be addressed.

2 The physical / environmental level

2.1 The physical landscape

The multiple rivers (*nodirs*) that empty into the Bay of Bengal drains a large part of the Himalayan range. Over time the enormous amounts of water and sediments carried with these *nodirs* have created the largest delta in the world, covering most of the present-day Indian state of West Bengal and Bangladesh.[3/] The largest *nodirs* by far are the Ganges and the Bramaputra.

The Surma, a smaller *nodir* compared with these two, but still quite large, originates in Assam and enters the Bengal floodplain via the Indian state of Cachar. The Surma drainage basin is identical with the Sylhet area located in northeastern Bangladesh. Sylhet lies along the southern foothills of the Khasi and Jainthia Hill range, and north and west of the Indian state of Tripura. Surma is drained by numerous smaller *nodirs* that originate in the hill range to the north in India.

The topography of the Sylhet area is a very important factor. While essentially a valley, Sylhet is extremely flat, and Surma splits up in several smaller *nodirs* that join again further out in the valley. The Surma itself passes through the town of Sylhet, continues westward on a course that takes it quite close to the hill range, and parallel to it, before suddenly turning south. During part of this stretch, the Surma

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2/ Consult also the website for the international CBNRM workshop, that took place in Washington D.C. on 10-14 May 1998, at: www.worldbank.org/wbi/conatrem; and the CBNRM Net website, at: www.cbnrm.net.

3/ The term 'Bengal,' as used in the following, denotes the combined area of Bangladesh and the state of West Bengal in India.

runs through the Habiganj and Sunamganj districts (*zillas*) in the western part of Sylhet, which is of particular interest for this paper.

The annual cycle is divided roughly in two by the amount and timing of rainfall. The monsoon season goes from around May-June until October, while the rest of the year sees little rainfall. Rainfall in Sylhet during the monsoon is quite substantial, and is added to by the amount of water that enters with the Surma and the numerous smaller *nodirs* and streams in the hills. Because most of Sylhet – in particular Sunamganj and Habiganj – is essentially flat (as is indeed most of the Bengal delta), and it thus has no way to go but inundate the whole area. Thus, large parts become inundated during the monsoon, and stay that way until long after the monsoon is over. Because of the topography the water level will rise fast upon commencement of the rains. The regular occurrence of extremely sudden and heavy rainfall in hills will add to this (the Khasi and Jainthia Hills have some of the highest rainfall recorded on earth), producing crash floods that can be dangerous for people and domesticated animals alike.

Large parts of Sunamganj and Habiganj differ from the rest of Bengal by the fact that they contain a large number of natural depressions where, after the monsoon waters have drained away in the winter, a large amount of water will be left, forming perennial lakes with no inlet or outlet (cf. Rashid 1991). Throughout Bengal such water bodies are referred to as *beels*. In Sylhet, these water bodies increase substantially in size during the monsoon, often combining several smaller *beels* and *haors*, and can become so huge as to resemble inland seas. These very large water bodies are referred to as *haors* throughout the year, while smaller water bodies also are here referred to as *beels*. The area that is flooded only during the monsoon consists of relatively low-lying land, and is referred to as a floodplain (cf. Islam, A. 1990; Khan 1997). Parts of Sunamganj and Habiganj, together with parts of Mymensingh to the west, is the *haors* area par excellence, and it is this *haors* basin that is the particular area focused upon in this paper.

The Surma floods are an annual, regular and normal occurrence, following the annual seasonal shift in climate and rainfall. Thus annual flooding has, normally, clearly positive sides to it, including fertilizing agricultural fields and grazing areas, and enabling migration of fish between *haors* and *nodirs*. Extremely high levels of water, for which the local population nor the ecology is prepared, does occur however.[4/]

Nodirs and monsoon water has shaped and transformed the physical landscape in Sunamganj and Habiganj, and continues to do so. The two water-related physiographic processes at work are alluvion and diluvion, respectively. Alluvion refers to the building up of land, as silt is sedimented. Such natural ridges or levees, locally referred to as *kandhas*, provide barriers between the *nodir* and the land beyond (cf. Islam, A. 1990). In this way, *khandas* contribute to the on-going process of creating the *beels* and *haors*, and to maintain water after the *nodirs* are drained, following the end of the monsoon. The other process, diluvion, refers to the erosion of land. Thus, diluvion processes will break down *kandhas* and create new channels for *nodirs* (cf. Chowdhury and Bhuiya 1990).

[4/] According to my *haors* basin informants, members of two Hindu fishing castes, there is an increase in the occurrence of crash floods, as well as in the amount and intensity of above-normal flood levels.

2.2 The ecological landscape

The *haors* basin will here be understood as an ecosystem, that is, a basic functional unit comprising both the non-living environment and organisms that humans have to deal with, each of them influencing the properties of the other, and both necessary for maintaining life (cf. Ali, S.I. 1990). Following Odum (1975), an ecosystem is comprised of four general classes or constituents: (i) abiotic substances and conditions of existence (incl. basic elements and components); (ii) producers, largely green plants; (iii) consumers, largely animals; and (iv) decomposers, largely bacteria and fungi. The *haors* ecosystem is composed of a number of different, separate and interacting sub-ecosystems, including forest, terrestrial and aquatic sub-ecosystems.

Of special interest in the case of the aquatic sub-ecosystem are the consumers, in particular fish. The Bengal delta has one of the richest inland fisheries resources in the world. The ecological characteristics are such that a very varied aquatic life has developed, and the fish biodiversity is rich and varied. Rahman (1989), discussing freshwater bony fishes in the Bangladesh part of the delta only, lists 260 species in 145 genera and 55 families. My informants in the *haors* basin provided vernacular names of almost 120 species of fish that were caught locally, most of which were used for food. Most species of fish utilize different habitats in different parts of their life and/or the annual cycle. For example, there is an extensive seasonal migration between *nodir* and floodplain/*haor* habitats, with some species breeding in the *nodir* and others in the floodplains/*haors* (cf. Ali, M.Y. 1997).

3 The early history of the *Haors* basin

This section presents a broad picture of the history of the *haors* basin, up to the beginning of the British colonial period.[5/] The emphasis, here as in the following section, will be on key aspects of the immigration and settlement history, together with ideas about types of natural resources that were valuable, the rights' systems to these resources that developed, and ways and means of appropriating them.

3.1 Immigration and settlement

The *haors* basin was the last part of Bengal to be colonized. This is only natural given its inaccessibility due to the extreme difficulties of traveling into and through the area, especially during the several months long annual flooding. Up to fairly recently there were no roads into the area, and communication took place by boat (this is, to a large extent, the case even today).

Studying the history of the *haors* basin presents some clear problems. Prior to the 12th century there is next to no information available about the inhabitants, and our understanding of what went on up to the 17th century is very sketchy. During the British period, the then Sylhet district was never cadastrally surveyed, as was the rest of Bengal. This means that information usually available from survey and settlement reports are not available for the *haors* basin for the British period.

Based on a number of indices, the immigration and population history of the *haors* basin can be divided in a number of discrete periods (Table 1).

5/ The information in this section is, to a large extent, based on Islam, S. (1985); cf. also Ali, M.A. (1990); Allen (1905); Islam, S. (1997b); Principal Heads... (1968); Rizvi (1975).

Table 1 – Historic Periods in the *Haors* Basin

Period	Years
Formative	? – Early 17th century
Mughal	Early 17th century – Ca. 1760s
British	Ca. 1760s – 1947
Post-Colonial	1947 –

Source: Partly adapted from Islam, S. (1985).

Due to the inaccessibility of the basin, and the need to rely on water borne communication, the early settlements would have been established along the major *nodirs*, specifically the Surma. Larger *nodirs* also tended to build higher *khandas*, which were attractive as locations for settlements.

The early immigrants included Hindus that had migrated there from Muslim ruled areas elsewhere in Bengal, as well as a number of ethnic groups that moved down form the hills to the north, including Garo, Hajang, Khasi and Koch. The total population must have been very small. They were, in large measure, drawn to the area partly because of its productivity and partly because of the "favorable tenurial terms" (Ali, S.I. 1990). According to Islam, S. (1985) there are no references to fishing in the early period, only to slash and burn and to plough agriculture.

Further Hindu immigration took place possibly throughout the 13th century, following the expansion of Muslim power in areas to the south and west. With the Muslim conquest of Sylhet in the early 14th century the migration from outside Sylhet likely stopped, while an increased migration of Hindus to the *haors* basin, internal to Sylhet, may have occurred. Following the Mughals' defeat of an Afghan stronghold in Orissa in 1592, a large number of Afghans fled and ended up in Sylhet, including in the *haors* basin. With this, a new layer of complexity was added to the *haors* basin population. With the Muslim conquest of Sylhet in 1612 the situation began to change, and from the beginning of the 18th century to the beginning of the British rule there was a continuous growth in the population. A conflict gradually arose between the sedentary cultivators and the tribal shifting cultivators, and the latter over time moved out. Immigration from neighboring districts reached a peak in the 1770s, when almost all the cultivable land in the *haors* basin was brought under plough cultivation. At about this time, in 1765, Sylhet came under the control of the East India Company.

From the 1780s onwards, the population showed a declining trend, as did the area under cultivation. Islam, S. (1985) suggests that successive natural calamities, in particular, floods and earthquakes and subsequent environmental changes, were the causes for this. This decline continued through the 19th century. As a result, the *haors* basin became known for its valuable fisheries only. In the beginning of the 20th century the *haors* basin again began to attract colonizers. This time, as well, an important factor was the opportunity to cultivate lands for only a nominal rent. In addition, the relative population pressure in other areas of Bengal was a consideration. The first wave of colonizers would have been seasonal cultivators. The successful harvests, plentiful fish and good grazing grounds in the winter season encouraged them to move permanently.

3.2 Evolution of property rights

3.2.1 The formative period

To understand the evolution of property rights, it is first necessary to understand the specific and unique settlement pattern that developed in the *haors* basin. This settlement pattern was predicated completely on the interaction between physical environment, on the one hand, and the annual seasonal rhythm, specifically the monsoon season, on the other hand. The often extreme and long rainy season dictates much human activity in the *haors* basin, then as now. As people enter the *haors* basin on boat via *nodirs* and *khals*, they would look for land on which they could make their settlements. Invariably, such places, the *khandas*, were few and far between. The location of *khandas* determined most aspects of the pattern of settlement, including the location of settlements, their sizes and their layout. As a rule, settlements would be, and still are, very narrow, typically consisting of central path with huts on both sides, and often very long. The location of *khandas* furthermore determined the means, characteristics and frequency of interaction between settlements, or villages (*gram*). Situated along *nodirs* and *khals*, people would communicate with each other by means of small boats, specifically during the monsoon season. The distances between villages were often large and minimized contact, specifically during the monsoon.[6/]

Early settlements would have been characterized by a marked frontier mentality, which has been studied in detail in other parts of the world. Factors that helped shaped this frontier mentality include: (i) low population density, (ii) separate settlements that were more or less self-sufficient and independent, and (iii) extensive – as opposed to intensive – natural resource use.

Most of the people, then as now, would have had a livelihood consisting of agriculture and fisheries, in many cases with some animal husbandry thrown in. This livelihood would have been, then as now, structured along a seasonal basis. Whether people practiced agriculture, grazing or fishing, or some combination, they would live in these tight *khanda*-based *gram*, and travel, either by boat or on foot, to perform their subsistence practices in the surroundings of the *gram*.

What kind of RC developed in the *haors* basin? We can confidently assume that property rights, including RC, did evolve, but do not know the process nor the outcome. In lieu of the lack of data about property rights in this period, the following hypothetical scenario is proposed. This scenario is guided partly by what is known about frontier settlement processes elsewhere, partly by intuition, and partly by a kind of “backward compatibility” (to borrow a term from the computer field), extrapolating from existing cultural institutions and practices.

The general hypothesis is based upon the *modus operandi* for the settlement process, as outlined above. As far as fishing is concerned, the *haors* were so productive that several species and sizes of fish would be available at any time, in the area around the settlement, and whenever people wanted to fish. Over time, increased knowledge about the various species of fish, their habits, habitats, location throughout the annual cycle, and desirability, would lead to preferences of locations for fishing and gear. In a situation of extensive resources usage, and with low population levels, this would have led to people exploring and using resources broadly. With an increasing population, a process that gradually led to a focus of the

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6/ Islam, S. (1985) argues that a high degree of self-sufficiency was a marked feature of a traditional *haors* basin village, given the long distances between villages as well as the annual long isolation of villages during the monsoon season.

area surrounding each gram would have taken place. Further along, people in neighboring *grams* would develop informal rules for what areas (aquatic and terrestrial) and resources that belonged to each *gram*, thus drawing an informal border between the areas utilized by each gram.[7/] Furthermore, given the extent of flooding of agricultural land during the monsoon, land would not have been simply re-classified during the monsoon, and a continuum of land-water evolved, that still is in use, and determines when fishing can take placed on flooded lands.

Some important aspects of these emerging RC are important to keep in mind. First, I hypothesize that the institutions that evolved for access to and control of fishing between neighboring *gram*, amounted to these aquatic resources being defined as a RC for the whole *gram* (while, conversely, the same resources would be private resources from the point of view of the outside). Second, it is important to keep in mind that such RC is that they were informal rights, for those that were party to them, while being no less real. Third, while informal, and because they were evolving, there were very likely conflicts connected with disagreement over interpretations that clearly necessitated a parallel evolution of inter- and intra-gram-level institutions to deal with conflict adjudication. Such mechanisms would have been supported by – and would in turn have supported – an emerging rationality of group decision-making and control

The general model put forward for the process of how RC evolved, needs to be made somewhat more complex in two specific areas: (ii) some gear are very specialized, and need to be used in specific micro-ecosystems that may be located outside the traditional area controlled by the settlement and which would require to be taken into account in the evolving agreement between neighboring gram; and (ii) women and children, who use special and simple gear and catch very small fish, as well as quantities of fish, largely for consumption .

At the time when the Mughals entered the *haors* basin, I am suggesting, there would have such more or less emerging or developed RC. These RC were, I am furthermore suggesting thwarted, destroyed or incorporate by the colonial embrace from the 17th century onwards, starting with the Mughals and continuing under British control.

An interesting question, to be mentioned in passing, is whether these primordial fishers, presumably initially only Hindus and various ethnic groups, developed a sense of environmental ethics, that, consciously or subconsciously, amounted to developing institutions concerning environmental sustainability? One view is that, as the waters were so productive, and the population density so low, there was no need for such an environmental ethics. A converse view is that they nonetheless did, based on the fact of a multitude of nets and fishing technology that was extremely species- and micro-ecosystem specific.

3.2.2 Mughal period

The term RC will here be used to refer to the situation prior to the arrival of the British. This means that Mughal management decisions, which themselves were using, transforming and codifying even older and emerging rights, will be considered traditional (if not indigenous) even through they were imposed.

Up to the beginning of the 17th century there was apparently no revenue collection. The various ethnic groups practiced shifting cultivation, and were thus,

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7/ I have seen this process unfold along the coast of Western Ghana, where members of two neighboring fishing villages recently had agreed to draw an imaginary line into the ocean, perpendicular to the coast, to mark the extent of each village's territory.

practically speaking, exempt from paying revenue. The Hindus were, as plough cultivators, "... mostly grantees of rent-free lands" (Islam, S. 1985:8). The Afghan immigrants that began arriving in the late 16th century did not stay in any particular place, and did not pay revenue to any authority. If follows that it is uncertain whether there was any revenue collection also in the case of fisheries prior to the arrival of the British.[8/]

After the Mughal conquest of Sylhet in 1612, a system of revenue collection gradually took shape. The whole area was divided in *parganas* (a larger area, mostly identified for revenue purposes), which had earlier been settled as *jalmahals*, or fisheries (Islam, S. 1985).[9/] The fact that the Mughals created of modeled *parganas* upon an earlier settlement of *jalmahals* would seem to be an indication that at least certain large and/or profitable fisheries paid revenue. Early in the 17th century most of the *haor* basin were settled with revenue farmers that cultivated almost all the land, excluding the big *haors* (Islam, S. 1985).

4 The political / economic / administrative level

The accomplishments of the Mughals as regards administration and an aquatic revenue system apart, the real difference in terms of enclosure of the RC for local people, quantitatively and qualitatively, came with the British period. A series of legal changes throughout the colonial and post-colonial periods, specifically the 1793 Permanent Settlement, had the implications that local rules and estate holders acquired private ownership rights over *haors*. This had crucial implications for local resource management, and for the fisheries management system that evolved.

4.1 British rule and riparian commons

Following the concern with RC in the British colonial conception, alluvion and diluvion were seen as key environmental processes that needed constant attention, both on the technical/engineering side and on the legal side. On the technical/engineering side, the Surma was navigable by steamer almost to Sylhet town, and it was imperative to maintain it navigable (Lees 1906).

On the legal side, a number of Acts and Regulations were prepared throughout the British period that addressed aspects of aquatic resources management, including alluvion, diluvion and fisheries. One key piece of legislation is Regulation XI from 1825, titled "A Regulation for declaring the Rules to be observed in determining claims to Lands gained by alluvion, or by dereliction of a River, or the Sea". Relevant parts include: (i) alluvial lands are frequent source of contention (Preamble); (ii) "although the law and custom of the Country have established rules applicable to such cases, these rules not being generally known, the Courts of Justice have sometimes found it difficult to determine the rights of litigant parties claiming *Churs* or other lands gained in the manner above described." (Para 2); (iii) if a river is a dividing line between two estates, no amount of alluvion and diluvion processes change that (Para 2); and (iv) lands gained by gradual accession shall be considered

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8/ This would likely set the *haors* basin apart from the situation elsewhere in Bengal. Thus, in his seminal work on the history of the Bengali people up the Mughal rule, only recently made available in an abridged English translation, Ray (1994:110-111) argues that "[t]here are no specific references to fish in the inscriptions or the edicts, but whenever land grants were made, entitlement to the waters was granted too, i.e. the catchments, canals, creeks, aqueducts, channels, ponds and so on, and such entitlements is mentioned in all the edicts from the eighth century on. Thus, it is not unreasonable to suppose that these grants of land including 'all the waters' also included 'all the fish'."

9/ The term *jalmahal* is a combination of the Bengali words *jal* (water) and *mahal* (area, estate, etc.).

an increment to the tenure of the person to whose land or estate it is thus annexed, with certain provisions (Para 3).

4.2 The court cases

The position of RC, covering also informal and locally evolved RC as argued above, are addressed through analysis of select 19th century court cases that deal with alluvion and diluvion. A key question to answer is how the British court system dealt with state/private versus communal/collective rights.

- Why focus on alluvion and diluvion? Because these physiographic processes affect river banks, which is an important part of RC.
- Why study court cases? In order to try and locate data on how alluvion and diluvion changes and constitutes RC.

Such court cases represents a potential window into the past, regarding the existence of such commons, and the interaction between traditional norms of culture and imposed regulatory / legal system.

Partly in response to an increasing demand on the judicial system, it was reformed in the early 19th century.[10/] Following a final reform in 1831, the lower levels of the civil part of the justice system in the Bengal Presidency came to consist of: (i) *district* – the *moonsiff's* court of primary jurisdiction; (ii) *zilla* – the *sudder ameen's* superior court of primary jurisdiction; (iii) *zilla* – court of appeal, supervising and hearing appeals from the primary courts (Stokes 1959).

The cases to be analyzed come from the Sylhet *Zilla* (District) Court of Appeal. They cover a period of 11 years, from 1846 until 1856.[11/] Only a small part of the total number of cases brought before the two courts of primary jurisdiction were appealed, and were available for this review.

In this period several hundred cases were appealed from both the district-based court of primary jurisdiction, and from the superior court of primary jurisdiction. The cases appealed range the whole gamut of issues and conflicts. The overwhelming majority deals with land and the different types of land, addressing issues like, for example, inheritance of land, settlement and sale of land. A large number of cases address issues connected with inheritance. A smaller number of cases deal with various aspect of fishing, including rights to fish in various water bodies (including in *beels*, *nodirs* and tanks), trade in dried and fresh fish, right of way for boats, and conflicts within fishing castes and between fishing castes and others (including both Hindus and Muslims). Of all the cases consulted, only 8 deal with alluvion and/or diluvion, in one way or another (Annex 1).

Reading the cases that deal with alluvion and diluvion, several issues are immediately noticeable. First, as a rule the cases address alluvion, not diluvion. Second, all cases deal with "land" in the generic sense. One the one hand, it is clear that "land" is used to mean not just (agricultural) land in a narrow sense. On the other hand, in almost all the cases agricultural land is clearly most important. Third, all cases deal with some kind of conflict over (private) ownership of land. The causes for such conflict differ, as does the way in which it plays out, and how the cases are resolved. Fourth, alluvion and diluvion does not play a really key role in many of the

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10/ The following quote may give some sense of the need for changing the judicial system: "One of the chief characteristics of a Sylhetti is his inordinate love of litigation. There is a large amount of crime, and there are a great many false cases." (Principal Heads... 1868:283).

11/ The cases, bound in annual volumes. are available in the British Library's OIOC Reading Room. They have the Shelfmarks: V/22/465, V/22/469, V/22/474, V/22/480, V/22/487, V/22/492, V/22/498, V/22/501-503, V/22/512, V/22/520 and V/22/528.

cases, and in a couple of cases alluvion and diluvion is of marginal importance. Fifth, in almost all cases, the aquatic type of lands enters as *nodirs* and *khals* that constitute borders between lands with different ownership, or did so in the past. Sixth, alluvion and diluvion play a role specifically in connection with the fact of *khals* and *nodirs* functioning as borders (often referred to as '*khal-khater-khal*'), at the time of the court cases or earlier. Seventh – and perhaps the most fundamental fact for the argument that is advanced here – none of the cases make any reference to traditional RC, or indeed to any kind of customary practices or communal aspects of the management of these riverine lands.

The above conclusions, in particular the last one, have to be put in context. The following specific aspects of the judicial process merit attention:

- The cases are often very brief, and contain only the bare minimum of information (the decisions in the courts of primary jurisdiction were often very long and detailed). But even the cases that stretch over many pages do not contain the kind of data that is of interest for the current exercise.
- Only a very small number of the cases that were taken up by the primary courts were actually appealed, and there is no knowing what kind of selective mechanisms, if any, determined which cases were appealed, and which were not.
- Analysis of all appealed cases for the whole Zilla for three years (1846, 1850, 1856), broken down to months, gives some interesting information: (i) the number of districts from which appeals were sent is very limited – some districts are not represented at all, and for those included a few are heavily represented while the rest only sent a few cases; and (ii) the number of cases per month vary, with the monsoon being a less 'popular' time to appeal cases. The reason for the second fact is more or less straightforward, which is not the case for the first fact.
- There appears to be a distortion in the types of issues covered in cases from the various sub-districts, for example, in the core *haors* basin I would have expected relatively more cases that dealt with fishing.
- The circumstances under which cases may have been referred to the court of Sudder Dewanny Adawlut are not known.

The imbalance in origin of cases, the variability throughout the year in number of cases, and the distortion in types of issues covered, are issues that makes for uncertainties in trying to interpret the cases dealing with alluvion and diluvion. An immediate conclusion is that it would possibly be necessary to study the court cases dealt with by the *moonsiff's* court of primary jurisdiction on the district level.

The overall judicial process, as gleaned from reading the many hundreds of cases, shows some interesting characteristics that may or may not have a bearing upon the present issue:

- In the period under discussion, three English judges presided over the court of appeal. The first judge (1846-51) never once referred to relevant laws or to earlier cases as a reference point or basis for arriving at his decisions. The second judge (1851-55) brought about a marked difference in terms of using the available body of law, i.e. the Acts and Regulations, as a basis for reaching a judgment. Another difference was an increased emphasis on form, for example, on using the Sudder Court Circular letters.
- Nonetheless, in most cases during this period, there is, to a varying degree, no reference, explicit or implicit, to specific laws or cases as a basis for decisions. This may speak to the variability in which the body of law is applied, and to a

lack of consistency in the outcome. The same conflict should be treated similar in all cases, and this is the essence of legal doctrine.

- In a number of cases the court of appeal criticizes the decrees made in the courts of primary jurisdiction, and/or reverses these decrees. It would be interesting to learn why, for example, the *moonsiff* argues as he does in these cases? I see two possible explanations: (i) a lacking understanding of British law, and (ii) closer allegiance with local and/or traditional values and norms. It would be interesting to know which type of cases is reversed by the court of appeal and the reasons for this.
- There may be a tendency that cases involving rich, influential and/or prominent persons are given more attention, and preferential treatment.

Several court cases appear straightforward and common sensical, and would, on appearance, seem to have little to do with, for example, the rationale inherent in the Permanent Settlement.

A wealth of specific types of riparian lands are documented elsewhere in South Asia (Chakravarty-Kaul 1996: 56,83), including regulations for how to use them and culturally validated ways of addressing alluvion and diluvion. As RCs in the *haors* basin appear to be less evolved and used, it is an interesting question whether the RC here may be relatively less developed and complex. Given the lack of permanency in the relation between land and water, is it possible that this can have contributed to a relatively lesser development of RC?

5 The local level

It is my conviction that the cumulative effects of the various approaches to managing the aquatic resources in the *haors* basin, over the last several hundred years, have had increasingly detrimental impacts on both environmental and social sustainability. Although the attention in this paper has been on the British, the developments during larger part the post-colonial period have not made many changes for the better (but see section 7).

5.1 Aquatic ecology

The *haors* basin, and *haors* and river fisheries, are still very productive, multi-species production systems. However, the aquatic environment is becoming increasingly stressed, and the productivity is declining dramatically. There are a number of factors, including fertilizers and pesticides, excessive use of water to irrigated agriculture, flood control measures and overfishing.

One important indicator of ecosystem health is the aquatic biodiversity. According to the fishers in the village of Joykolosh, where I did anthropological fieldwork in the mid-80s, a substantial number of species of fish were becoming increasingly scarce, or had disappeared altogether, while the average size of other species was decreasing. This corresponds with the fact that several types of fishing gear were not in use anymore, because the species that they would fish were not available, or because fish of large enough size were not available. IUCN established a red databook list on freshwater fish species in Bangladesh 1998.

5.2 Linkages

Linkages between water, land and water in the *haors* basin are many and complex, and the complexity increases when the human population and its various subsistence practices are taken into consideration.

The single most important feature and aspect of the *haors* basin is water: flowing water, still water, water in rivers, water in *haors*, water in *khals*, water in *beels*, water from the heavens (it rains more here than anywhere else in Bangladesh, and some of the world's highest rainfall are recorded in India, just north of the basin). More than this, the *haors* basin is set apart by the single feature of the enormousness of the annual flooding. In the *haors* basin it is difficult to talk about any clear divisive line between land and water, which remains more or less identical over time. In the *haors* basin a separation of land and water is a relative thing, what is water one month is land the next month, and vice versa. Not only is the border between these two conceptual categories blurred, but both categories can, at one at the same time, show aspects or characteristics of the other category, in a layered way. Thus, to take an example, the floodplains, which, from one point of view are farmland, can also be understood as fishing grounds.

Rivers and haors (which are both land and water at the same time) are fundamentally different aquatic ecosystems, and feature importantly in many fish species' life cycle, with annual migrations between river and haors (roads and flood protection embankments have many places stopped this linkage.

There are old linkages, but then there are also new linkages: increasing reliance of more then one crop per year means increasing need for water, which is largely drawn from haors during the winter season.

Forests is a somewhat easier topic to deal with, as there is not a whole lot of it. Well into the 19th century large parts of the haors basin was covered in dense jungle, which subsequently lost to the increasing need for agricultural land. Fishers in the haors basin have traditionally used large branches and bushes to make large stationary fishing tools called '*kathas*.' The large-scale and recent deforestation of the haors basin has clearly impacted the ecology of the region, including the patterns of alluvion and diluvion, in ways not yet understood.

5.3 Socio-political-economical

The livelihood patterns of Joykolosh are in many ways typical of the special subsistence adaptation in the *haors* basin.[12/] The dominant subsistence practice is rice production, in the *haors* and floodplains. During peak labor-intensive periods, both in agriculture and fisheries, large numbers of agricultural day laborers are needed, partly drawn from the ranks of the local fishermen. The fishermen accordingly straddles, in an annual cyclical pattern, work within both the agricultural sector and the fisheries sector, and between being self-employed and being paid laborers.

From the point of view of the Joykolosh fishermen, their village is strategically located: it lies along Surma, a major *nodir*, next to and in-between two large and very productive *haors*, there is a *khal*, Nainda Nodir, connecting the river and Dekhar haor, and via the Sunamganj-Sylhet road they have direct and fast access to local markets, for buying gear, and to wholesale fish markets outside the *haors* basin (the

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12/ On the one hand, beginning with the creation of the state of India in 1947, many of the traditional, often caste-based, occupations have disappeared. Joykolosh is accordingly not anymore self-sufficient. On the other hand, some relatively recent developments connected with an increasing reliance on commercial activities around serving the many people who travel through Joykolosh sets it somewhat apart. These economic activities include food stalls, small cafeterias, diners (locally called 'hotels'), transport of goods (specifically fresh, but also dried, fish), transport of people, drugstores and goods for sale at the local *hat* (market).

traders would often buy fish in the village, upon landing, pack it and send it directly on the buses that goes to Sylhet town).

An increasing number of the population in the basin, relatively and absolutely speaking, are engaged in fisheries activities, either directly (part-time of full time), or indirectly.

In the Formative period there would likely have been an emerging rationality of group decision-making and access control. Such a rationality, understood as adaptation and individual decision-making, can be found also today in the *haors* basin. People utilize available resources jointly, cooperate, share and collaborate. The only thing that is missing is control of the aquatic resources.

Alluvion and diluvion is a daily fact that the members of the two Hindu fishing castes in Joykolosh have to live with. Nainda Khal, that they live next to, itself a product of human intervention, is eroding a few feet each year. The riverbanks along the Surma are common lands, or, maybe more correctly, nobody's lands (which does not imply a right to fish with most gear, though). A special type of commons, again an effect of the continuum between land and water, is that fishing on the floodplains (which formally are agricultural lands) is allowed, using specific gear, when the water level is below a specific height.

An interesting case of a 'new' aquatic RC can be reported on: In order to make the major roads in the basin all-weather road they have to located above the highest water level, which means that deep trenches have to be dug alongside the road. These ditches, formally owned by a government agency, will contain fish, where mostly children and women fish.

6 Analysis and implications

The history of the haors basin has been divided in a number of periods (Table 1), corresponding to major shifts in control and management of people and natural resources. At this point, based upon a discussion of some characteristics of one such management approach, namely the British, we can enlarge upon this and such management approach, it is possible to generalize to a set of 3 such management approaches. They are: local community-based management, public sector management, and private sector management. I propose to identify these three management approaches with the various periods identified in the history of the haors basin (Table 2).

Table 2 – Management Approaches in the *Haors* Basin

Period	Years	Management Approach
Formative	? – Early 17th century	Local community-based mgmt.
Mughal	Early 17th century – Ca. 1760s	Public sector mgmt.?
British	Ca. 1760s – 1947	Public sector mgmt.
Post-colonial	1947 – 1990s?	Public and private sector mgmt.
Modern	1990s –	Local community-based mgmt.?

I identify the Formative period with local community-based management (with each settlement basically an autonomous unit, there was no alternative. The Mughal period is, tentatively, characterized as a case of public sector management, but too little is known about this period to state this with any certainty. The British period was clearly a case of public sector management (one might say they contributed to defined it). The Post-colonial period was largely a continuation of the management approaches of the preceding period. A new element was brought in though, namely the private sector: the accepted way of realizing the revenue from the haors, already begun under the British, was to lease them to the highest bidder in public auctions, often for a period of 3 years. Under the Pakistan Government (1947-71), followed by the Bangladesh Government, this system was expanded. Finally, and again somewhat tentatively, I am suggesting that recent changes and new approaches to managing aquatic resources in Bangladesh, may, qualify to the labeling this as a new period, emphasizing local community-based management, thus making the circle complete.

This is clearly a very general model that glosses over much local variation, but it is, nonetheless, useful for portraying some key aspects of the evolution of management approaches in the *haors* basin.

6.1.1 Natural resource management and rationality

In a cross-cultural perspective, a lot of the confusion that surrounds rationality is connected with a failure to distinguish between individual or group decision-making, and to assess the overall evolutionary or ecological rationality of a given strategy or action. An important element or aspect of rationality in management is that different forms of rationality correspond to different forms of dispute settlement, and the three identified management approaches show this clearly. A ritual type of rationality goes together with avoidance as form of dispute settlement, what may have been the case during the Formative period. A bureaucratic type of rationality, on the other hand, corresponds to adjudication as dispute settlement, what the British aimed to do with the judicial and administrative structure they built up in the Bengal Presidency.

The Formative period was characterized by a kinship, local-level, many-stranded, subsistence-based, social organization type of rationality.

It was replaced, via the Mughal Period, by The British public sector management approach that came out of a specific time and setting (Guha 1981; Stokes 1959), and tried to deal with a complex set of perceived issues and problems. It can be characterized as a single-minded, macro and economic type of rationality. The preference of the colonial administration, more generally economists and administration of private property right regimes, over common property rights regimes is intimately connected with the fundamental rationality and rationale behind colonial administration, indeed any administration of territories on behalf of others (Beckmann in Spietz and Wider) (see Figure 1).

The Pakistani and Bangladesh post-colonial states inherited the British structures, for good and bad. Rationale efforts to address the perceived problems and what was perceived as useful, had – like in the case of the British – intended and unintended consequences. Part of this post-colonial rationality was a short-term focus on maximizing income earning.

At the present time, Bangladesh has embarked upon a process of institutional analysis and reform, which emphasizes decentralization of the public sector, and increasing contact with the civil society, NGOs and the private sector. Thus, a completely new type of rationality is entering the arena, one that runs counter to the

old colonial and post-colonial ideals. But then again, the problem faced in managing natural resources, including aquatic resources, are rather different today as compared with earlier.

As for the fishermen in Joykolosh, they have their own type of rationality. Beating the system by fishing illegally is much talked about. What the British would have termed free-riding, the Joykolosh fishermen saw as their right, as the rich man who had leased the *haor* was stealing their fish. They simply tried to get hold of some of it before he did. The thrill of it was also important.

In Figure 1, "Community-based organizations" or "People" can be replaced with, for example, "local private sector," depending on one's view on key players in the decentralization, and on what is of overriding importance: economics or accountability, to put it somewhat pointedly.

The most fundamental conclusion: the existence, furthering for RC is antithetical to public sector management of aquatic resources. In the case of the British colonial power, it was destroyed, and in the case of the Bangladesh post-colonial state, this situation was upheld through the mixture of public sector and private sector management, as well as a centralized management model. The solution would seem to be in a kind of management model that is a mixture of several of these elements, where, importantly, the public sector has a much diminished role, while still being crucially important to the success of this enterprise.

7 Applications

7.1 For Bangladesh

Reference has already been made to recent work on RC and community-based natural resource management (CBNRM). On the historical side interesting work has been done RC (cf. e.g. Pokrant et al 1997; Wood 1994). On the practical side there is lots of activity, by many smaller NGOs, and larger organizations, including Caritas, ICLARM, World Bank (cf. e.g. Ahmed 1993; Rahman et al 1996).

The paper argues that much of the current work that supports and advances traditional inland fisheries in Bangladesh is contributing to the creation of riparian commons. A concern with riparian commons can enhance ongoing and planned efforts to increase aquatic sustainability and productivity at both the macro and micro levels, for example, large-scale water management schemes and involving local fishers and giving them use rights to water bodies.

7.2 Internationally

The growing body of knowledge on traditional aquatic resource management in Bangladesh has important theoretical and practical implications for the study or riparian commons elsewhere. It can: (i) serve as a model for efforts to establish viable and equitable fisheries management regimes; (ii) be a source of motivation and empowerment; (iii) enable participatory approaches; and (iv) contribute to cross-cultural comparison of riparian commons – both traditional and new ones – as a separate field of inquiry.

8 Conclusions

More work clearly needs to be done on RC, including historical work in the *haors* basin (and elsewhere in Bangladesh), and analytical work on the ongoing work

to create riparian commons. Outside Bangladesh important work needs to be done on collecting knowledge on RP, setting up a data bank, collecting literature, networking, etc., etc.[13/]

The importance of studying riparian commons lies not narrowly in the applied sphere. The importance or learning more about traditional riparian commons in the *haors* area is *not* necessarily to use this towards constructing present-day commons. There is a link between basic research on RC and applied research, but the link is not as direct. Basic research can aid applied research, but has its own self-aimed rationale. It is a goal in itself to study the evolution and characteristic of riparian commons.

RC is situated at the interface of water and fish, both of which are scarce resources. Thus, both are clearly global public goods. RC is clearly one way of contributing to a future sustainable management of these resources.

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13/ A website on RC will be built up, with the following address: www.cbnrm.net/riparian.

Annex 1 – Sylhet Zilla court of appeal: Cases on alluvion and diluvion

Id.	Brief Presentation of the Cases	Comments
No. 1, 1849 (1/6/49)	Appellants appealed a decision by the Principal *Sudder Ameen*, arguing their ownership of certain lands, located in another *mouza*, and separated by a *khal*. The principal court decreed in favor of respondent, who argued that the *khal* was not the shared border between the properties, but belonged to respondent. Thus appellant had no right the lands situated on the other side of the *khal*. The appeal was dismissed.	Although not mentioned, this is clearly a case of alluvion.
No. 11, 1849 (15/6/49)	Plaintiff declared himself occupant of certain *bheet* land, and being entitled to fish in the *nodir*. Moreover, he declared that respondents sued him as defaulter on rent for a fishery in another location, extorted money, etc, for which he sued to recover the sum paid, plus an equal amount for penalty. Respondent argued that the *bheet* land was under the collector's *khas* management, as part of another revenue unit. The appellant (the Collector of Sylhet) stated that the defendant had argued that the *bheet* land belonged to him, but that an investigation by the Collector found that defendant was wrong. The *Moonsiff* held plaintiff's statement established by the evidence of his witnesses. The appeal court argued that the real question was whether the *bheet* land was under the tenancy of plaintiff, and whether respondent had realized rent on it. Based on this the appeal was dismissed.	Alluvion. Plaintiff argues that he is entitled to fish in the *nodir* on account of the *bheet* land he claims occupancy to.
No. 4, 1848 (23/7/49)	Respondents sued for reversal of a summary order, under which their claimed purchase of a large tract of land was determined to be fraudulent. At the heart of the argument were contradictory claims as to who owned what at what time, and where the borders were. The appeal was dismissed.	Two smaller pieces of the contested land was affected by diluvion
No. 117, 1850 (30/9/50)	Respondents sued for rent lost, because appellants stopped and old watercourse and opened a new one, thus prevented them from cultivating certain lands. Respondents argued that an old watercourse had silted up and taken a new course, and appellants had closed the new course and opened up the old one. The *Moonsiff* decreed in favor of respondents. The appeal court did not find it proved that respondents had sustained loss from any acts of appellants, nor that they had ever derived rent from the land. The decree of the *Moonsiff* was reversed.	Alluvion
No. 4, 1852 (6/7/52)	Appellants sued for possession of certain lands. The disagreement partly had to do with the nature of the boundaries of the lands, e.g. whether they were *khals* or *nodirs*, and with suppositions, on the part of the *Sudder Ameen*, as to diluvion having caused a *khal* to have become a *nodir*. The essence of the matter, according to the court of appeal, is that respondents have sued according to existing boundaries, and not as they were laid down in the measurement *chitta*. The court found respondents' right to the land in question not established. The *Sudder Ameen*'s decision was reversed, and the respondents' claim was	Diluvion

	dismissed.	
No. 123, 1853 (28/12/52)	Respondent sued to establish right to certain alluvial, newly accreted, lands, from which she was ousted by a summary decision. Appellants plead that their respective lands, as well as that of respondent, lie side by side, that the *char* land in question was formed to the east of all these lands, that respondent consequently is entitled to one-fourth only, and that this was awarded her by the criminal court, the remainder having been awarded to appellants. The *Moonsiff*, based chiefly upon the question of possession and evidence taken before the magistrate, decided that all *char* lands belonged to respondent. In reviewing the evidence, the court of appeal found that respondent had failed to prove her right, and decreed to reverse the *Moonsiff*'s decision.	Alluvion
No. 153, 1854 (3/4/54)	Respondent sued to recover lands taken from him. He stated that a *nodir* had silted up and was settled with him, that appellants claimed some land bordering the *nodir* land, that the land the appellant claim is situated in another (his) zilla, and that the boundary between the zillas is the silted up *nodir* (*khal-khater-khal*). The *Moonsiff* decreed in favor of appellants. Based on evidence submitted, the court of appeal reversed the *Moonsiff's* decision.	Alluvion
No. 252, 1855 (14/2/55)	Plaintiff sued to obtain possession to land that accreted to his land because of alluvion. Defendants argued that the accreted lands were smaller, and stated that they had been dispossessed. The *Moonsiff* decreed partly in favor of defendants, as a result of which both parties appealed. Because of uncertainties in connection with the issue of dispossession and new information regarding this, the court of appeal reversed the *Moonsiff*'s decision, decreed in favor of appellant and dismissed the case of defendant.	Alluvion

Notes: *Bheet* = Low-lying lands along *nodirs*, largely accessible in the winter time; *Char* = Alluvial lands forming in *nodirs*, as islands; *Chitta* = Land roll.

Sources: British Library, OIOC Reading Room. Shelfmarks: V/22/480 (1849), V/22/487 (1850), V/22/498 (1852), V/22/512 (1854), V/22/528 (1846).

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