

CHALLENGES IN OPEN WATER FISHERIES MANAGEMENT IN BANGLADESH

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ABSTRACT

Bangladesh, basically a floodplain consisting of extremely low and flat land, is endowed with enormous inland fishery resources that contribute a significant part of freshwater fish production. Yet only 8% of the catchment of the rivers that create this floodplain is in Bangladesh. The fisheries sector accounts for 10% of agricultural GDP, 3% of total GDP, 8% of total export earnings, 60% of animal protein intake and 7% of total protein intake. Fisheries in Bangladesh are divided into four distinct sub-sectors – open water capture fisheries, closed water aquaculture, coastal aquaculture, and marine fisheries. This paper covers the open water fishery and its management constraints.

Floodplains in Bangladesh contain different types of waterbodies character, e.g. flowing rivers, Beels (usually deeper depressions in the floodplains) mainly of two types open and closed, Haors - extensive low lying areas comprising several perennial Beels and mainly covering northeastern Bangladesh and Baors/Oxbow lakes or dead rivers that lost their connection with the main stream - these are situated mainly in southwestern Bangladesh.

These complex waterbodies mean coordinated management is essential for addressing the common issues in a cluster of waterbodies as resources such as fish are highly migratory and move wherever water is connected. Complexity of different property rights in a cluster and diversity of users have had a cumulative adverse effect.

Open water fisheries management in Bangladesh through community involvement is possible but there are different factors affecting progress. Distribution of benefit depends on the strength and appropriateness of the institutions, attitudes and social capital created under community based initiatives.

Key words: Open water fisheries, challenges, community involvement, Bangladesh.

Introduction: Fisheries Management in Bangladesh

Capture fisheries in Bangladesh is still contributing major part of whole fisheries resources. The reason that these are well established as common property resources and water is available in them round the year.

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Introduction: The most important ground for inland fishery comprises 2.83 million ha of inundable floodplains that are constitutes mostly private owned agriculture land. This potential fishery is under threat due to increasing population pressure leading to over exploitation of fisheries resources in this area.

The first move towards open water fisheries management started in 1985 through the introduction of New Fisheries Management Policy (NFMP). Main objective in this regard was to secure better access to the

poor fishers to improve their livelihood conditions. NFMP introduced fishing right to the “genuine fisheries” by introducing screening process of identifying fishermen at Upazila level.

The main target of the policy “open access of open waterbodies declared by the Govt in 1995, was to remove the difficulties faced by fisher groups. This system made open water fisheries management difficult. Indiscriminating exploitation of open water fisheries resources started at that time and local muscle men took the advantage of open access, the poor fisher are adversely affected as they cannot compete with power class people. Thus unlimited access for fishing is ultimately established.

Closed Jalmoahals remained under leasing system. In 1984 total waterbodies ranging from 3-20 acres was under the jurisdiction of Upazila while waterbodies more than 20 acres had been placed with ADC (rev) i.e. under MOL. The purpose of the leasing system was however, the augmentation of revenue.

In 1994 Govt decided to transfer management of smaller closed beel (CB) to the local Govt bodies (UP, Municipalities and City corporations). In 1997 Govt ordered to transfer smaller waterbodies up to (20 acres) to the Ministry of Youth and Sports (MoYS) to create employment for the youth in the rural level. In this regard Department of Youth and Sports will arrange training for youth groups to explore better output from these waterbodies. This initiative of the government did not used by the local Youth societies rather some vested interested groups formed so called youth societies and grab all smaller waterbodies. The most fundamental issue on accessing smaller waterbodies by the youth seems less active to achieve the broad national goal.

There are many reasons for the gross mismanagement of the leasing system and corrupt practices. A good percent of Govt waterbodies remain disputed by the court for several years. This situation forced the administration to fix up lower price of the waterbody or to keep it for local unruly elites for exploitation link with the political parties.

The Jalmahal management system and government policy of open access to open waterbodies have also contributed to the decline of the Natural fish stock. This system of lease award to the highest bidder and granting lease for duration of 1 to 3 years are essentially incompatible with the measure for conservation. (Dr. Huda, 2003). In this situation lessee invest money to take conservation only when they see some return from the investment.

From the above description, significance of fisheries management in this wetland can be realized; though it was neglected before 1990. After 1990s a few of pilot projects were initiated by different donors. Improved management of open water fisheries was the first initiative in this regard but real Community Based Fisheries Management had been piloted in 1995 by through the introduction CBFM-1. At present about half dozen projects have been working in this area of open water fisheries management, however, open water Fisheries Management is still a challenge.

CHALLENGES IN MANAGEMENT OF OPEN WATER FISHERIES:

The context of open water fisheries management has been covering the idea of community management in fisheries especially in Bangladesh. Community based fisheries management was initiated in early nineties with the introduction of a project called Improved Management of Open Water Fisheries. CBFM-1 was the prime output of that project. Later on CBFM-2 project comes as an output of CBFM-1. Although the project has completed its practice about a decade but still there is long way to go for achieving the target of sustainable management of open water fisheries in this country through involving community. The intention of fisheries management is to empower fishers for better management but lot of challenges are involved in managing open waterbodies in Bangladesh, as open waterbodies have lot of complex environment in biological and social context.

This complex situation of waterbodies need coordinated management essential for addressing the common issues in a cluster of waterbodies as resources since fish are highly migratory and move wherever water is connected. Complexity of different property rights in a cluster and diversity of users have a cumulative adverse effect.

Identification of Stakeholders for Fisheries Management:

Sustainable inland fisheries management program need proper identification of stakeholders to participate in management. However, due to diverse character of waterbodies and communities in different parts of Bangladesh become it is tough to make a unique stakeholder category. Historically, fishing is an occupation and principal source of livelihood of certain associated community. These people are the key player of fisheries management but in Bangladesh context, fishers are categorized into three broad groups namely, professional or full-time fisher, seasonal or part-time fisher and subsistence fisher.

- Once fishing was the profession of certain community (Hindu). After the independence due to population pressure and lack of employment in rural areas force other people e.g. farmer and non fisher to take fishing occupation. So dominance over traditional fisher already has been made by the converted Muslim fishers.
- Seasonal or part-time fishermen are mostly from marginal and medium farmers who have landholding up to 150 decimals. Sometime other day laborer, petty trader also become part of it. These people are seasonal as because they fish during flooding period in the floodplain area and after post monsoon they switch over to previous occupation.
- Subsistence fishers normally fish for consumption. This is not a rigid occupational group vary region by region. These people are fish for mainly home consumption; surplus after consumption may be sold in market.

So access over the fishery resource by the appropriate stakeholders is considered an important factor. Sometime, fishery management is influenced by other classes of people who are not related with the resources. As a result fishers are unable to establish their right on the waterbodies. The rural power elite are in a better position to maintain their right at lesser transaction cost by using their social connections. The poor again lose out (Toufique, 1999).

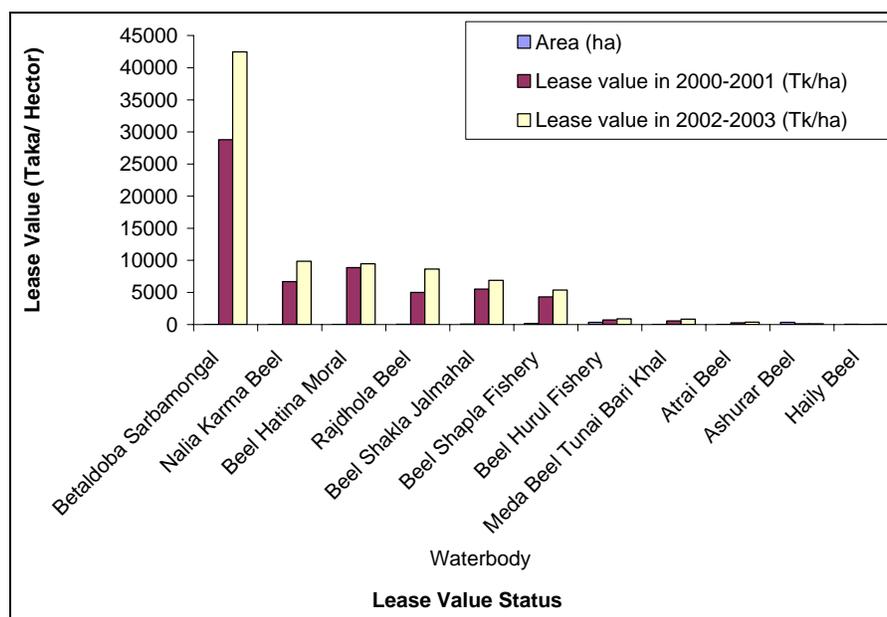
Uneven Lease Value Policy:

Once, land and fisheries were important source of revenue earning for the government. Fixation of land revenue has always been made in a distinct manner while, determining same for waterbody often ignoring importance of either area or the biological productivity of the waterbodies. Due to present tendering system of leasing wide variation in lease values (Tk/ha) are observed in the similar waterbodies. Some lease values are very high while some are pretty low. For example, in waterbodies under the Community Based Fisheries Management project there is a big variation ranging from Tk 53-42,455 per ha in 2002-2003 for 56 jalmohals (>20 acres) in CBFM-2). These values bear no relation with actual production or the numbers of fishers organized to pay the lease. It appears to have been fixed authority. Variations in lease values of the different waterbodies are shown in Table 1.

Table1: Examples of lease values of selected jalmohals under CBFM-2

Name of the Waterbody	Area (ha)	Lease value in 2000-2001 (Tk)	Lease value in 2000-2001 (Tk/ha)	Lease value in 2002-2003 (Tk)	Lease value in 2002-2003 (Tk/ha)	% Increase
Betaldoba Sarbamongal	20	575,625	28,781	849,105	42,455	32
Nalia Karma Beel	36	241,000	6,694	355,475	9,874	32
Beel Hatina Moral	35	310,000	8,857	331,875	9,482	7
Rajdhola Beel	50	250,000	5,000	431,000	8,638	42
Beel Shakla Jalmahal	76	419,000	5,513	523,625	6,889	20
Beel Shapla Fishery	161	691,055	4,292	863,819	5,365	20
Beel Hurul Fishery	336	240,000	714	299,425	891	20
Meda Beel Tunai Bari Khal	18	10,000	556	14,750	819	32
Atrai Beel	19	5,000	263	7,187	378	30
Ashurar Beel	350	42,660	121	42,660	121	0
Haily Beel	42	1,500	36	2,212	53	32

Note: six waterbodies with highest per ha lease and five with lowest per ha lease selected for table.



- Waterbodies vary greatly in their productivity according to region, physical characteristics, fisheries biology and year; while the number of fishing households dependent on them has no fixed relationship with area or production. Moreover, this arrangement fails to support the aim of sustainable and equitable management by fishers.
- There is no defined mechanism for adjusting lease value down to a reasonable level when waterbodies are transferred to a project. Ministry of Land (MoL) claim 25% higher lease value on its last rate. While, there are many example of gross mismanagement of the leasing system and corrupt practices that surround it. Government is losing revenue on two counts, firstly a handful number of waterbodies remain unsettled for several years consecutively. Secondly, local power elite gang up

and do not allow anyone to drop the schedule for competing in the tender process. This situation forces the administration to fix least value and present considerable loss of government revenue.

- There is lack in perfect information on productivity of waterbodies; a perfect market in bidding process is not yet developed. Therefore, past bidding is not a sound basis for setting lease values for fisheries to be managed by communities; it just provides a convenient figure in the form of the past lease value which preserves government revenue rates.
- It is expected to generate evidence on effective and sustainable fishery management benefiting poor people, including the production and income levels at the waterbody and household levels to guide overall policy decisions. However, in the short term there is a need to provide an enabling environment for the communities managing waterbodies without excess levels of government revenue being levied which can prevent fishers from earning enough to make conservation and sustainable management.

The actual lease values in some waterbodies have been summarized in Table. Based on this there is a strongly skewed range of leases in per ha terms with a few very high leases pushing the mean up.

Table Lease values in CBFM-2 Jalmohals where revenue was collected (2000-2001).

Waterbody type	No	Mean Tk/ha	Median Tk/ha	Range Tk/ha
“Closed beel”	14	3,057	1,743	36 – 28,781
“Open beel”	22	2,011	1,256	215 – 8,857
River	3	780	0	236 – 1,833

- It is not clear what should be done to address the inconsistencies regarding revenue collection from rivers. Evidence suggests that there some rivers with under New Fisheries Management Policy (NFMP) which revenue were deposited while, from others revenues are not collected. The information from few waterbodies should not be the basis for fixing lease value.

Lastly, though contribution of waterbodies to the total government revenue is insufficient but these have high importance to local elite and government officials. In this regard suggested fisheries management based on biological management to ensure sustainability through conservation measures is hardly achieved. Rather practices of over exploitation and habitat/wetland loss will continue to produce like the past. It is suggested that, whatever the waterbodies type, if an area is set aside by the community as a permanent fish sanctuary then there should be a reduction in the lease value. This will encourage communities to protect part of their waterbodies as fish sanctuaries.

VAT & Income Tax:

Now a days world revenue earnings are linked with such issues as right, equity, equality and welfare. In this regard some self contradictory rules have been imposed on the waterbody revenue earnings. For example the lease value on waterbody to a project will be based on the previous year’s lease price plus 25% in the first year. In addition, fishers also have to pay 15% VAT and 3% income tax for each waterbody leased. The issue is increase VAT and income tax is like adding fuel to the fire for to the poor fishers. National taxable net income is now Taka 100,000 per year but most of the fisher involve in fishery management living under subsistence level.

This matter had been discussed several times in different forum but still government acted that way to give it a good shape for fisheries management. In this regard there are serious institutional constraints of

MoFL and DoF as all power belongs to the MoL and ministry of finance (MoF). Considerable review in this regard is necessary to look at the condition of the resource, income and welfare conditions of the fishers and revenue needs of Government.

It is notable that acceptable price to have access to a government waterbody an single entrepreneur with no interest in long-term sustainability of resource use may be much greater than the lease (tax) but fishery management by the poor community can afford when it seeks to ensure resource sustainability without short term over-exploitation and to share the benefits among many fishing households.

Networking and Linkages:

One of the major challenges in fisheries management is to establish and develop better linkages within local community organizations. However, complexity of the process is creating hindrance to the institutions for achieving linkages. Department of Fisheries is not capable enough to facilitate and formalize institutional linkage with other similar projects Community Based Organizations (CBOs) of similar project at somewhere. Networking is not yet formalized by the ministry or department whereas this may have seen important at present. From the strategic point issues regarding compliance measures for fisheries management e.g. lease value payment, enforcement of different rules and social mobilization amongst the CBOs not yet dealt properly by the respective government agencies. Linkages with the policy makers at the central government level are still remain an important issue.

In this regard Community Based Fisheries Management (CBFM-2) took some initiative to build networking among similar CBOs of different projects. Meanwhile, CBOs have exchanged their experiences to develop better upper level institution but sustainability and development of the network is still a long way.

Social gain can be achieved through local fisher based community organizations. CBOs needs active support from local government for longer term sustainability but there is no formal empowerment of the local authorities, other than the limited power of the Union Parishad (root level local councils). Under this circumstance effective partnership of NGOs and government is not easy to establish. The lack of appropriate NGO and Government support after donors' funding timeframe does not ensure sustainable CBOs active participation.

Past experience suggest that Government staffs dominate NGOs in the process of project implementation or in any initiative taken for open water fisheries management. While, NGO staff are criticized the top down approaches of the government. However, in the longer term sustainable partnership between fishing communities and government is very essential. The ownership attitudes of the government officials towards waterbodies pose another problem for the fishers in longer term participation.

Cluster Waterbody Management:

In full monsoon most of area of the country turn into vast sheet of water. Most waterbodies get connected with each other. For each waterbody a Beel or section of river is derived as a waterbodies. Cluster waterbodies can be comprised either homogenous or heterogeneous in nature. Some cluster is comprised with several sections of rivers or can be a cluster of mixed waterbodies like river, open beel, floodplain farm land or other linked canal.

Constraints in cluster waterbodies management:

- Main issues related to those peoples are involved in fisheries management. People involve in fisheries management have not same ideas and clear view over the benefit distribution. Some people are interested to participate only for getting benefit but do not participate in management.

- Community is linked with Govt waterbodies are more profit oriented rather fisheries enhancement. However, floodplain beels communities takes more time for motivation but reality is that once they are motivated bear more enthusiasm to continue this.
- Linking with different community institutions sometimes took more time to mixing up or to take a holistic approach for the people with the community. Some unavoidable situation delayed the whole fishery management within the cluster.
- Govt policy becomes a factor affecting the fisheries management within a cluster. For example, in community based fisheries management project two clusters are comprised of small (less than 20 acres) and big (more than 20 acres) Govt waterbodies.

POLICY ISSUES IN OPEN WATER FISHERIES MANAGEMENT:

Open access in flowing rivers

Developing countries like Bangladesh has wide range of problems including limited resources. The waterbody leasing system has seen many changes in different regimes from the British period. In 1995 government declared an open access for fishing in flowing rivers. The main stated objective of this announcement was to give fair access to fisher community without paying for the right to fish.

- Evidence shows that poor fishers using these rivers are worse off rather getting more benefit.
- Under this system entry of better-off non-fishers has been made easier throughout the year. In flowing rivers, kata owners and money laundering mohajons (moneyed man) have and continue to play the dominant role in accessing and controlling the fisheries resources.
- Under open access system it was very tough to establish community management in rivers, none of which were formally placed under the declaration by government, although DOF has a general responsibility for sound management of all rivers in the country.
- Vested interest groups were so powerful in open waterbodies with resource that they almost covered the whole area with katas or used barriers (fixed engine). One specific example can be made from the CBFM-2 that a total of 22 flowing river or open jalmohals have been handed over to the project. Though these waterbodies were handed over to the project in 2001 several local issues related to management have slowed down progress.

New Fisheries Management Policy (NFMP)

Open water fisheries resources are under pressure like other common resources in Bangladesh. Development for fisheries management, aquatic ecosystem and biological management has been considered sometime by government. To target access to fisheries at fishers MoFL/DOF has taken up different experiments. In 1986 the NFMP was introduced. The policy aimed at restricting exploitation of fishers by the leaseholders and money lenders and ensuring proper management by the fishers through licensing of fishers by the Department of Fisheries (DoF) but in practice administered by the national fishers association. This was tested in a limited number of jalmohals. This policy offered some improvements for fishers but in practice individual fishers lacked the funds to pay their fees and the access arrangements were organized by the fisher association representatives or by previous leaseholders/money lenders. The policy effectively ended in 1995 with the open access declaration, but was then re-instated for some jalmohals under DOF, including both flowing rivers and beels.

Eight jalmohals under NFMP have also been included in the Community Based Fisheries Management project comprising a numbers of five are rivers and three are open beels. Main idea to include these waterbodies that it would come under a joint arrangement with NGO support under the CBFM-2 to broaden the base and transparency of fisher management while starting from those fishers recognized under NFMP. Moreover, some input support will be provided to the fisher community from the project as in NFMP has no input support from Govt side.

Issues Encountered in the NFMP were:

- Department of Fisheries has a screening process for selecting the genuine fishers with the help of fisher association and to be listed and licensed. The term genuine fisher needs to be cleared by definition but unfortunately official documents give erroneous explanation. As a result it is seen that after a few years some fisher leaders make connection with the local money lenders and involve some non-fishers for helping pay the lease and in return they can benefit from exploiting the resources.
- Though the objective of NFMP aimed to stop the exploitation of real fishers, malpractices by some leaders have left the initiative in vain. Moreover, these people are reluctant to make any collaboration with the local institution whoever, take initiative fisheries management.
- Financial insolvency of the fishers restricted them from taking up any investment in fishery management and even has seen fishers give up access control. In several cases the fishers have given sub-lease to the mohajons.
- With ex-leaseholds/money lenders retaining interests and lack of power and incentives and advice on conservation of biological resources, fish aggregating devices have not been limited in some of these waterbodies. Government support has depended on the individual officers at the local level.

For guidance, supervision and monitoring of the operation of the NFMP, Upazila level and district level committees were set up. Despite local DoF staff having a key role in these committees, in several cases poor coordination in between these committees and CBFM partner NGOs over the formation of functioning fisher organizations for waterbody management (CBOs) has revealed a serious lack of consensus on management issues.

- Delay by local level administration in handing over the waterbodies to DoF.
- Even when handed over inability of DoF to help the fishers reach any agreement on the use of different gears and in particular to limit brush piles (Katha) in the flowing river and influential or vested interested groups' control.
- Fishers are not so well organized yet by the NGOs and sometimes feel less interested or a lack of incentive and expected benefits to be involved in the management.

Due to these problems the health of the river fisheries and their aquatic environment is deteriorating day by day. The government policy of open access to open jalmohals (flowing rivers) is contributing to the decline of fish stock.

Small waterbodies (less than 20 acres)

Waterbodies (Jalmohals) with areas of less than 20 acres (8 ha) were handed over to the Local Government Division from 1996 and then the targeting of their leasing was transferred to the Ministry of Youth and Sports in October 1997. Tendering is used and leases are given for three years with the main objective of revenue generation, but tendering is now limited to registered youth groups. These waterbodies were intended for fish culture by groups of young people who would be trained in fish culture. In practice some small jalmohals are closed and suitable for this. However, most of the smaller waterbodies are part of open floodplain systems and seasonally connect to larger beels or rivers and floodplains, in this way they form vital small areas of dry season water where fish could shelter, but leasing under this system favors harvesting all of these fish to pay the lease and/or to stock fish in the dry season. In the haor regions as part of clusters of waterbodies – in this region there are many smaller jalmohals that form part of large open water systems. But due to local problems, related to access and sub-leasing for example:

- Youth groups of fishers can hardly get access in these fisheries, rather other well-connected group's gain access.
- The influential youth wings of different political parties along with some regular lessees are commonly involved in bidding for these jalmohals leases.
- Fishing and any active management (stocking) in most cases is done by a sub-lessee or by hired fishers.
- The lessees aim to earn a high income within the lease period results in degradation of fish habitat and it is difficult to achieve sustainable production.

The most fundamental issue regarding access to this size of waterbody under the open water fisheries management is that there is no assurance that any of these waterbodies where the activities take place can continue for a longer period. Ministry of Fisheries and Livestock and Department of Fisheries (MoFL) has no agreement such as a Memorandum of Understanding or Agreement involving Ministry of Youth and Sports or Ministry of Land reserving these pilot smaller jalmohals for the fishing communities either through direct local arrangement at the Upazila level. Therefore it is risky to invest in community organization and for the fishers in management. So far DoF did not have strong interest to work in such waterbodies even though those are a part of larger systems and fisheries where there is a clear need for better coordinated decisions and management actions by communities working with government support.

OTHER ISSUES:

- Gradual siltation is a major challenge for environmental degradation of the WB. During monsoon all over the country WB got connected with the main streams, Mainstreams carry silt from different parts or erosion as well as huge silt carried from Indian Hilly region. Due to siltation open waterbodies are becoming shallower day by day. For open water fishery management and enhancement habitat restoration is one of the important task. Main constraint is huge monetary involvement is needed for this purpose.
- Decline of floodplain areas are and interruption of connectivity by different water control structure. Moreover, constructions of roads are in a much unplanned way. Bangladesh is credited with the highest road density in the region and by 1996 there were about 21000 km of paved roads, 14400 km of feeder roads and 87,000 km of rural roads. All this activities have their impact of fish movement and migration (Dr. Huda, 2003)
- Community based resource management should be a clear part of national policy. Bangladesh fisheries management has been tied up with external threats that cannot be overcome, in some cases of powerful political interest in waterbodies. Politicians drive policies towards conserving their own interest over the waterbody.
- Most of the open water fisheries management initiatives have been developed in the line with partnership among government and non government organizations. Based on partnership it is expected that the partner will adopt coordinated efforts overcome local issues and modify their strategy in that way. Particularly temporary funding in projects limits better partnership for empowering local community involve in the management.
- Ministry of Land is the custodian of all waterbodies in Bangladesh, while Ministry of Fisheries and Livestock (Department of Fisheries) is the main promoter of fisheries resource development. Due to poor coordination between these two ministries open water fisheries management becomes critical day by day. Other linked ministries do not participate in policy formulation process moreover all Government mechanism becomes faulty. Present leasing policy does not empower fishers to resist themselves from outsiders force fishing.
- Internal conflict over waterbody boundaries and demarcation contributes to unsuccessful fisheries management. This situation drives users to extract benefits after calculating cost and income.

- It is important that to ensure the necessary separation of gender benefit will be in the fisheries management. Women involvement in fisheries and other resource management activities are not yet agreed by the Govt policy.
- The WB management system and Govt policy of open access to Waterbody is faulty. Compliance of this policy is not yet be established clearly. Intention of this policy formation was to link up open access of the poor fisher and to exclude those elites who have linkage with politicians and other interest groups. However, this policy removed all fishing restriction but failed to put up an alternative system of conservation. It is well established in developing country like Bangladesh delivering any common property free of cost always has a risk of over exploitation by the mass poor people or some influential will get whole benefit.
- Who are involve in planning process at National level open water Fishery Management have few knowledge on policy analysis or on fisheries management. These people are mainly generalist as most of them are from Civil Cadres service.
- Before 1990 DoF activities were concentrated mainly on extension of aquaculture. Thus most of the official has less expertise on open water fisheries management.

Some Initiatives for Overcoming these Challenges:

For addressing inland open water fisheries management challenges in Bangladesh community base fisheries management has been introduced in 1995. Among other open water fisheries management initiatives CBFM is the most important one covering the open water fisheries management.

- Undertaken open water fisheries development activities through partnership of NGO, DOF and WorldFish Center working to assess the impacts of these approaches (particularly on poor people and fishers), their sustainability (institutional, social, economic, and biological), and the potential for expansion.
- Linked part of the project activities to identify, test and assess co-ordination and administration mechanisms for community management arrangements within larger fishery and wetland systems. Based on the view that for CBFM to be effective in the long term and over larger areas it will need to operate within co-management frameworks that help distinct user communities share information and experiences and coordinate their management activities.
- Lastly it works to inform and influence all fisheries policy stakeholders of improved management approaches. For this there are a mixture of policy and communication studies, legal studies and advice, and media development for awareness rising at different levels. These activities are undertaken by specialist national organisations and by WorldFish Center.
- The first phase of Community Based Fisheries Management (CBFM) project started in 1995 with 19 different types of waterbodies. Funded by the Ford Foundation U.S.A. Due to successful completion of first phase second phase was introduced in 2001 with 115 waterbodies spreading all over the country.
- CBFM-2 has been developing and testing a range of community based fisheries management approaches and models in different types of waterbodies for overcoming the challenges.
- Three models have been identified for managing open water fisheries. These are, Fisher managed, Community managed and women managed approach.
- CBFM-2 already took initiative to overcome policy issues by raising it to the ministerial level and other policy level people.
- Initiated a study for developing a framework for understanding policy changes and processes in the open water fisheries in Bangladesh. Policy process study has identified different stakeholder for formulating the policy process.
- The community Based Fisheries Management Project has been addressing and mobilizing the communities and local government for open water management and to put forward for habitat

restoration and conservation in an attempt to link micro and macro levels of stakeholders. Otherwise the huge potential of open water fisheries sector will be overexploited and destroyed for the increasing population of Bangladesh.

CONCLUSIONS:

- The key challenges in the policy environment, particularly on the commitment of government to continue on the path of community approach for managing natural resources such as open water fisheries. Changes in policy could put to xxx the large effort that has gone into xxx communities and setting up local committee such as CBOs for managing open water fisheries in Bangladesh.
- CBFM-2 is one of the important initiatives in open water fisheries management in Bangladesh. However, several projects have been undertaken. The table below shows the status of different projects on open water fisheries management.

Table 2: List of Projects involving Communities in Inland Fisheries

Project Name	Funding Agencies	Implementation Partners	Scheduling
Improved Management of Open Water Fisheries	Ford Foundation	DOF, ICLARM, BRAC, Proshika and Friends in Village Development	1991-1994
Oxbow Lakes Small Scale Fishermen's Project—Phase II	IFAD and DANIDA	DOF and BRAC	1991-1997
Compartmentalization Pilot Project (CPP)	GOB, FRG and the Dutch	BWDB and a number of NGOs at different times	1991-2000
Community Based Fisheries Development and Habitat Restoration Project—Phase I	Ford Foundation	CNRS and Proshika	1994-1997
Community Based Fisheries Management (CBFM)—Phase I	Ford Foundation	DOF, ICLARM, Caritas, Proshika, BRAC and Banchte Shekha	1995-1999
Management of Aquatic Ecosystems through Community Husbandry Project (MACH)	USAID	Winrock, DOF, BCAS, CNRS and Caritas	1998-
Dampara Water Improvement Project	GOB and CIDA	BWDB, DOF, NACOM and Tara	1998-2001
Fourth Fisheries Project (Inland Fisheries Component)	GOB, IDA, GEF, DFID and Beneficiaries	DOF, BWDB, LGED, NGOs and local fishing communities	1999-2004
Sustainable Environment Management Program (Fisheries Component)	UNDP	DOF, IUCN, CNRS, NACOM and BCAS	2000-2003
Community Based Fisheries Management (CBFM)—Phase II	DFID	ICLARM, DOF, BELA, BRAC, CNRS, Banchte Sheka, Caritas, Femcom and Proshika	2001-2006
Community Based Resource Management Project (Fisheries Component)	GOB and IFAD	LGED, MOL, DOF, DAE, DOL, BKB and local NGOs	2003-2014

Source: ICLARM, BWDB and LGED

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