



MACH (Management of Aquatic Ecosystems through Community Husbandry) is a Government of Bangladesh project supported by USAID. The project partners (Winrock International, Bangladesh Centre for Advanced Studies, Center for Natural Resources Studies, and Caritas Bangladesh) have worked closely with the Department of Fisheries since 1998. The aim was to establish community based co-management and restore and increase sustainable productivity at the ecosystem level in three large wetlands: Hail Haor in Sreemongal, Turag-Bangshi river and wetlands in Kaliakoir and the Kangsha-Malijhee basin in Sherpur. In the wet season these wetlands cover about 32,000 ha, and in the dry season they include over 100 distinct waterbodies. Over 110 villages inhabited by over 184,000 people are directly involved.

## Community-based Co-Management: A Solution to Wetland Degradation in Bangladesh.

Developing successful community based co-management arrangements that ensure sustainable wetlands, productive fisheries and meet the needs of resource users and other stakeholders is a challenge. Policy makers, donors and other external actors have a vital role to play in meeting this challenge. Future wetland resources management policies should be based on community participation and address wider watershed issues, by ensuring that lessons and best practices from previous experiences are widely adopted. This document brings together lessons drawn from over seven years developing and implementing approaches to support community based co-management in the MACH project.

### BACKGROUND

In an attempt to find new solutions to problems resulting from top-down approaches to resource conservation and sustainability, community-based co-management recognizes that local communities should have direct control over the management, utilisation and benefits of local resources (in this context land, water and fishery resources) in order to value and use them in a sustainable manner.

MACH adopted this approach to address declining fisheries and environmental degradation of wetlands in Bangladesh. The quality of the fisheries declined under constant pressure, and centralized management, which has had adverse impacts on the poor's access to the common resources and has reduced biodiversity. The project's major purpose has been to demonstrate to communities, local governments, and policymakers the viability of a community based co-management approach to wetland management and conservation in Bangladesh that involves entire floodplains and surrounding watersheds. "Communities" here refers to all people in a given area who depend for their livelihoods (income and food) on a specific wetland and its products. MACH differed from other community-based projects in Bangladesh that concentrated just on fisheries management. MACH's goal was to increase the sustainable productivity of all floodplain resources, including fish, plants, and wildlife and over an entire floodplain ecosystem (*beels* - lakes and depressions, seasonal floodplains, rivers, and *charas/jharas* - streams), not just a single water body. Additionally, MACH recognized that many wetland problems were actually watershed management issues. One unique aspect of this community based management approach is its decentralized approach to co-management that focuses on collaboration with local government. As reduction of fishing pressure was likely to be a critical part of reviving floodplain fisheries, MACH included supplemental income-generating activities focused on the very poor who would be restricted from fishing for specific periods to restore the resource. More than 30% of those who directly benefit are poor women.



## LESSONS LEARNT

## Building Community Resource Management Institutions

The development of community based organisations (CBOs) for wetland management has empowered and recognized local bodies to take responsibility for decisions and actions to restore and sustain wetland uses and productivity. The key building block to the MACH approach for sustainable wetland management was establishing Resource Management Organizations (RMOs), each of which represents all the stakeholder groups for a particular part of the wetland system. The RMOs have worked to protect water bodies, to address problems identified by the communities in these areas, which have involved setting rules and limits on use, and restoring wetland habitat including tree planting.

### Empowering and enabling the poor

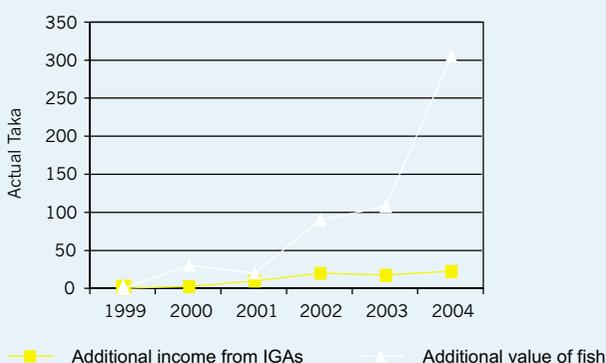
Wetlands harbor multiple resources and multiple stakeholder groups use these resources for income and for subsistence. The MACH approach involves the whole community neighboring the wetlands, including rich and poor, influentials and subordinates. In some cases local elites dominated the process and took a leadership role. It sometimes became difficult to ensure the poor were heard and to ensure their rights to access and decision-making. MACH overcame such challenges by drawing on the following lessons:

- CBOs, open to all, create an opportunity for local elites to join executive bodies, influence decision-making and take control of resources by use of their status and power. Neither the elites nor the poor should be excluded; elites can influence local opinion in favor of conservation.
- Without a concerted effort to build institutions that empower the poor, the majority of people (who are poor) do not have bargaining power and do not understand their rights. MACH addressed this through general awareness raising events such as popular theatre, ensuring participation in Union Parishad and local government committees and by helping the poor to form Resource User Groups that had capacity building programs and have their representatives included in the RMOs
- Poor resource users needed to be a majority in RMOs to ensure decisions did not favor the wealthy: by 2005 about 60% of the members were poor resource users.
- Special efforts to develop the capacity of poorer participants were needed so they could hold key positions in RMOs. The poor must be aware of their rights and need leadership training to play a role in local institutions.
- Constitutional arrangements (secret ballots, eligibility for different posts, roles of leaders, term limits) governing the operation of the RMOs, promote pro-poor participation.
- Alternative income generating activities (AIGAs) allowed poor fishers to increase income during times when fishing is closed. MACH reduced fishing pressure by almost 2,500 person hours/day of fishing time to allow the resource to recover.

### KEY MESSAGE

Communities have complex structures. Community wide organizations can benefit from the influence of local elites as champions of conservation and the poor, but their motivation needs to be understood. They may take control of resources to the detriment of the poor unless time is taken to establish practices for good governance that limit elite dominance in RMOs and in expropriating the resource.

Increases income in MACHsites



Milon Boiddo looking proud with two cows

### Participation of women

Despite successfully setting quotas for women's participation in RMOs, it is difficult to make the organizations accessible and relevant to women and to overcome social and cultural biases. Women do not fish and are not considered to have first hand experience in managing the resource, yet their livelihood is affected by the resource. By the end of 2005 seven RMOs had general bodies with 25% women or more.



Female RMO members involved in resource management planning.

### Best practices to ensure good governance

- MACH developed RMOs that include representatives, who volunteered their time, of all stakeholders from the villages neighboring the wetlands.
- Participatory Action Plan Development (PAPD) workshops were facilitated by the project to identify problems and develop a consensus on potential solutions involving all stakeholders in the communities, including the poor. These should be repeated as local management evolves: the initial PAPDs may not have involved all the appropriate villages and areas covered by subsequent RMOs.
- Based on a general consensus and overall plan, developing and updating detailed resource management plans must be an ongoing process, not a one-time event. Plans should be reviewed, activities evaluated and communicated to the wider community annually in line with the wetland resource leasing (Bangla) year.
- Leaders of the organizations need to be reminded to listen to resource users and inform them of major decisions, and resource users should understand what they should expect from their leaders.
- Elections by secret ballot are most appropriate for choosing leaders (office bearers).

### Sustainability

- Project designs from the outset should place a major emphasis on institutional sustainability.
- Formal recognition of RMOs is essential for their survival. All but one RMO has been registered with the Social Welfare Department as independent organizations.
- So far water bodies (*jalmohals*) have been reserved for community management for 10 years (if associated with a project), but renewable. Long term tenure and access to water bodies should be ensured, on condition that the RMOs follow best practices.
- Sound financial management is a requirement, and RMO representatives need to be trained in record keeping and financial management. The RMO needs to be able to prepare annual budgets that fit its resource management plans, raise funds in fair ways (such as fishing fees), and account for this to the members and wider community of users (fishers). Independent audit subcommittees can further strengthen transparency and good financial management practices.

### KEY MESSAGE

Formation of CBOs is a crucial task, the failure and success of wetland resource management depends on CBO performance and accountability. Meetings should be conducted among stakeholders of different social status so each group can express their problems and possible solutions. PAPD can ensure poor people's opinions are reflected in resource management. It is a continual process to review progress, identify failures and their reasons, find solutions, and make improved plans.



Resource management plans are the basis for RMO activities

### Pro-poor resource management-access to fishing.

Prior to MACH Hail Haor, fishing rights in leased *jalmohals* were sold to investors and middlemen, now Dumuria RMO has awarded fishing rights directly within their area to 35 members of the fishing community representing about 100 fishers.

- There should be regular assessments of the strength of community institutions during and after projects, with training provided to address any gaps.
- Local government, especially Department of Fisheries officers, should advise and support RMOs in their management activities in the long term after project support ends.
- Endowment funds can greatly enhance sustainability of project interventions after the project has ended. Generally, after a project ends, the activities and institutions gradually weaken or disappear and the benefits dwindle. After consultations with the community groups and all levels of government from local to national, MACH established an endowment fund under government control, but with the co-management committees responsible for decisions on the use of the annual interest income. In this arrangement, the principal can never be touched but the accrued interest is used to carry on co-management functions including meetings and especially for small grants to RMOs for restoring wetland habitats.

## Effectiveness in Resource Management

To ensure sustainable management of wetland resources, RMOs adopted regulations in their areas. Over time, each RMO has agreed upon a set of rules or norms regarding fishing within the areas it directly controls or influences. All 16 RMOs adopted four or more management rules that delineate fishing times, means of harvesting and plans for physical interventions. Through these rules, exploitation of fishery resources is limited and the resource is replenished.

The RMOs' single most important resource management intervention has been establishing 56 wetland sanctuaries. These are demarcated areas within a wetland that retain water throughout the year and where the community has banned all fishing so that fish can safely feed and over-winter and then repopulate the wider floodplain during the monsoon. MACH has used artificial structures such as hexapods and pipes placed in the sanctuary to provide a permanent refuge for fish. There is wide consensus on the need for refuges where fish would not be harvested or disturbed.

Sanctuaries function best when RMOs close fishing for two months in the whole wetland in the early monsoon (spawning season) and ban all destructive fishing methods such as dewatering. Based on these practices, in the MACH sites:

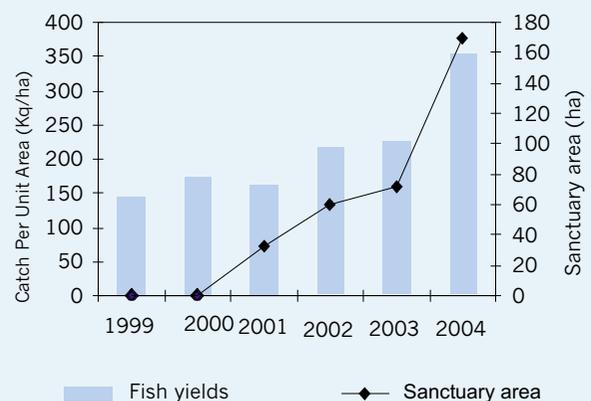
- Fish yields increased by 2 to 5 times over baseline yields before intervention of 58-171 kg/ha, to 315-390 kg/ha in 2004-05 and re-established 8-10 threatened fish species.
- Fish consumption increased in the surrounding communities by 40% (from 32 to 45 gm/person/day).

In addition the project improved the watershed by introducing contour pineapple cultivation to reduce soil erosion. Large areas, mainly along streams and in wetlands, were reforested to restore wildlife habitat, protect soil, and provide a future income for the communities (over 600,000 trees have been planted).

## KEY MESSAGE

Evidence showed that establishing sanctuaries for conservation of brood stock during the dry season ensures long-term success of fisheries management in an area by ensuring reproduction of a wide range of fish in the monsoon and by protecting other aquatic life. However, the decision to develop sanctuaries needs to be made by the CBOs.

Fish yields and fish sanctuary



Fish sanctuary established by RMO in Turag - Bangshi River, Kaliakoir

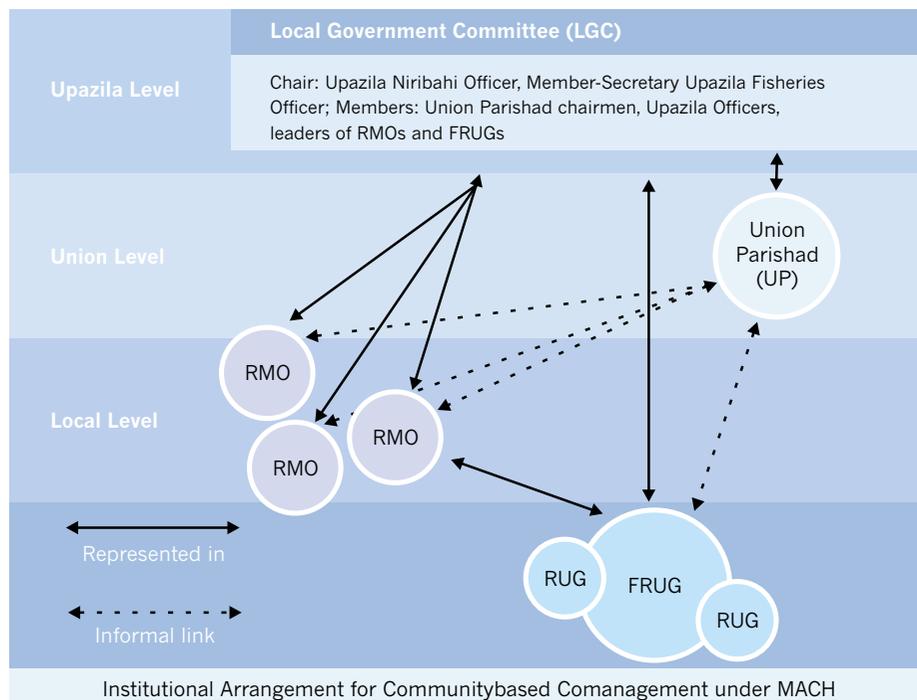
## Co-Management, Networking and Governance

Local government plays a powerful role in all development work at the grassroots level. However, often projects do not strengthen linkages with local government (Union Parishad) or administration (Upazila). Normally the Upazila level administration has no direct linkages with the community and typically they do not know the needs or constraints of the community.

MACH made linkages between the RMOs and local government - the elected Union Parishads and the officers of line agencies who form the Upazila administration to ensure synergies and to formalize the status of the RMOs.

Co-management involves sharing responsibilities between key stakeholders - resource users and government, and commonly involves devolving a greater share of management responsibilities from government to empower local communities. In MACH's experience this is best achieved by:

- Government recognizing and accepting RMOs as local institutions through registration.
- Ensuring poor fishers' long term access to water bodies (*jalmohals*) through agreements with the Ministry of Land to reserve those water bodies for RMO management.
- Having RMO management plans endorsed by Department of Fisheries officers.
- Encouraging the relevant Union Parishads to invite RMOs to observe and report in their meetings and UP Chairman also to be advisers to the RMOs.
- Forming co-management committees (known within MACH as Local Government Committees but due to be renamed as Upazila Fisheries Committees) at the Upazila level committees that include RMOs, Union Parishads and Upazila officers.
- Encouraging knowledge sharing between CBOs through networking to improve resource management and influence decisions more widely. The CBOs within an Upazila meet and cooperate with one another. MACH has collaborated with Fourth Fisheries Project to provide opportunities (workshops and exchange visits) for wider sharing and learning between CBOs.



### KEY MESSAGE

Well functioning linkages between the community organizations and the local administration are essential. MACH has invested in building linkages to local formal institutions. UP chairmen and Upazila administration may act as arbitrators when conflicts occur.



Fishing in Hail Haor

### Role of RMO cooperation and linkages with local government in conflict resolution

In Turag-Banshi area of Kaliakor, many outsiders were catching fish on particular day(s) of the year as a festival locally called *jini* or *baut* in two floodplain beels (Mokesh and Aloa beels). In 2005 all the RMOs in the area along with the local government (UP chairmen) jointly persuaded those outsiders not to catch fish in the sanctuaries.

## POLICY RECOMMENDATIONS

MACH has successfully established community based co-management in three large wetlands. The key policy issue is how to extend these best practices to some four million hectares of seasonal floodplains and about 12,000 jalmohals. Many of the lessons and best practices generated by MACH have already been incorporated by the DoF in its "Inland Capture Fisheries Strategy", which is based on community based co-management. In support of this the following recommendations are made:

1. Provide *long term leases to water bodies* to ensure secure access for those CBOs that have a legal identity, community rules, compliance to rules, equitable access for poor stakeholders to decision making and resources, self assessment procedure, transparent accounting, and that improve the resource base.
2. Ensure *strong linkages and capacity of CBOs* to obtain help and services from local government by reorienting local government to provide support to the CBOs in any circumstance. At the same time local government should be accountable to the community for its services.
3. *Extend and regularize co-management bodies in the form of Upazila Fisheries Committees*, comprising of representatives of CBOs, UPs and Upazila level government officials, and devolve responsibilities for decisions on access and oversight of fishery management to these committees.
4. Adopt an *ecosystem approach* when expanding community based co-management as this offers synergies compared with just a fisheries focus, or working in scattered water bodies.
5. Develop a set of criteria and procedures for *regular review* of the effectiveness of CBOs and their activities. Local government and the community should do these regular reviews jointly.
6. Develop a *general guideline* for the formation of any CBOs that will manage wetland and fishery resources.
7. *Facilitate networking for knowledge sharing and coordination* among CBOs and link up with relevant government agencies. Various projects of DoF and other agencies have established CBOs for better wetland management. These CBOs need to communicate with one another and with the government.
8. Government should end collecting revenue from *permanent sanctuaries* where the community will ensure conservation of wetland resources. A legal framework should be established for these kinds of sanctuaries and an agreement with local communities must be signed by the government.
9. *Endowment fund* should be set up where possible for sustainability, especially to support the communities protecting large sanctuaries that benefit other wetlands and communities.



## The Challenges Ahead

Despite progress in achieving community based co-management of aquatic resources, a number of challenges remain to scale up the MACH approach:

- *Ensuring sustainability of the institutions*
- *Ensuring future access to and control of wetlands by poor fishers*
- *Providing legal protection for sanctuaries*
- *Extending lease period*
- *Developing co-management institutions on a larger scale*
- *Providing management knowledge and training in wetland conservation that is useful to stakeholders*
- *Developing approaches to manage conflicts*
- *Reforming existing institutions to empower local communities to participate in determining management objectives*
- *Defining the future role of NGOs as facilitators*

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**Author:** Dr. Parvin Sultana | **Edited by:** Dr. Paul Thomson, Erin Hughes and Masood Siddique | **Coordination:** Esha Husain



## For more information contact

MACH Headquarters, House No. 2, Road No. 23/A, Gulshan 1, Dhaka 1212, Bangladesh,  
Phone: 8814598, 8816602, 9887943, Fax: (880-2) 8826556, URL: [www.machban.org](http://www.machban.org)