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**ICLARM-The World Fish Center's Experience with Social Research on
Governance and Collective Action in Aquatic Resources**

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Introduction

The widespread failure of governments to regulate and manage fisheries is reflected in the continued overexploitation of fisheries the world over. The failure and mismanagement is often attributed to the top-down, bureaucratic, and science based approach to fisheries management. This is also seen as a strong case of government failure in managing natural resources. Strong pressure has developed to radically change the approach for managing fisheries. This has led to the growth of a whole new approach for managing natural resources. The new approach is centered on the belief that resource users must become more involved in the management process and should participate in the regulatory decision-making. This approach is supported by the belief that users possess knowledge based on their experience which can be used to produce more effective and equitable solutions to the problems faced by the resource users. Participation of users also enhances the legitimacy of the regulatory regime thus reducing costly enforcement. The process of involvement increases the commitment and support for the regulations thus strengthening voluntary compliance with regulations in the fishery.

A whole range of terms are used to describe this approach, namely, community based resource management, participatory resource management, devolution, co-management and, cooperative management. This paper will discuss the social research program that has been developed at ICLARM-the World Fish Center since 1996 that focused on community approaches for managing aquatic resources. The program enabled the systematic analysis of the community based natural resource management phenomenon. The focus of the work at ICLARM is however on the aquatic environment although many examples of community based natural resource management are in social and community forestry, community wildlife management and community based irrigation projects.

The study of co-management and community management of aquatic resources is in essence a study of social organizations and institutions. It involves understanding the basis for the development of cooperative and non-cooperative institutions. The cultural and social qualities of human communities is an important under current which determines how communities will respond to challenges commonly faced by them with regard to declining natural resources such as the fisheries.

The Social Research Program

Social research in ICLARM-the World Fish center takes place within Policy Research and Impact Assessment Program (PRIAP). The program was created in 1996. The goals of PRIAP are : (1) to examine policy environment and provide policy options for ensuring wider adoption of technologies and resource management policies for enhancing nutrition, alleviating poverty and improving food security; (2) ensure benefits to poorer people in the developing world from production, management and conservation of aquatic resources; and (3) provide measures for setting research priorities and assessing the impacts of aquatic resources research and development. The program research

activities are organized around three thematic areas (1) Economic and social analysis and valuation of aquatic resources in developing countries; (2) Aquatic resources planning and impact assessment and (3) Legal and institutional analysis of fisheries management. In all the three areas of the program social research plays a major role. The major area covered by the research is in the area of community participation and collective action.

Community participation and collective action

It is in the area of community participation and collective action that ICLARM has made a significant contribution to social research. The continued deterioration of aquatic resources in the developing world coupled with the inability of governments to arrest the decline in resource conditions or provide alternatives to the increasing population spurred the involvement of communities and NGOs to play an active role in natural resource management. The role basically involved interventions involving institutional change such as introducing co-management within fisheries. The institutional change basically involved changing the rules that determine access to resources. But the process goes beyond just rule changes but involves a communicative and collaborative process through which rules are formed, who is allowed to participate and how conflicts are addressed and agreements made. The broader definition of institutions as suggested by Scot 1995, p 33 is used here. Institutions thus consist of cognitive, normative and regulative structures and activities that provide stability and meaning to social behavior. The research on co-management carried out at ICLARM is discussed further by looking at the work carried out from two major research projects at ICLARM. Namely the Community Based Fisheries Management Project, phases 1 and 2 in Bangladesh and the Global Fisheries Co-management project phases 1 and 2.

Community involvement in fisheries management in Bangladesh

The four million ha of openwaters in Bangladesh are among the world's richest and most complex fisheries. The rivers, beels (permanent and seasonal lakes and wetlands), baors (oxbow lakes), haors (large deeply flooded depressions), and floodplains support some 260 fish species. About 80% of rural households catch fish for food or to sell, and fish contribute about 60% of animal protein consumed. However, the many "miscellaneous" small fish caught from the floodplains by poor people have been neglected in official statistics and policies, yet they are the accessible and preferred food of poor people. Fish habitat destruction due to roads, embankments, drainage and flood control, and natural siltation, along with overfishing, have been commonly cited as major causes for the deterioration of the country's fishery resources. There are over 12,000 jalmohals (inland water bodies generating government revenue) in Bangladesh. These water bodies are leased to the highest bidder with a preference for fisher cooperatives but very often, either directly or by bidding through a cooperative, control ends in the hands of rich and influential lessees. It has been widely believed that fishers suffer not only from declining catches but also from exploitation under this leasing system.

Social research intervention

The approach developed from the concept of co-management was to help in the involvement of fisher groups to organize or be represented in local management bodies for each of the project water bodies in the expectation that they would then be able to cooperate, take collective decisions and develop local rules to regulate fishing. Indicators of this include the establishment of management committees, the level of participation of fishers in decision-making regarding these fisheries, and the rules and decisions taken.

The complexity of inland fisheries in Bangladesh and the often strong competition for control over the resources and benefits (income and resource rent) that flow from them, mean that conflicts of various types are common. The ICLARM Community based fisheries management project helped in the development of local management committees that improve cooperation among the fishers and the wider community. This ensured that conflicts could be mediated before they became widespread and uncontrollable.

Models of cooperation

Different models of cooperation evolved in the Bangladesh context. The four models as shown in Figure 1 evolved through the process of working with the communities and NGOs, government agencies and research organizations. The first model is a NGO-led strategy to establish fishery rights by target groups in publicly owned water bodies (jalmohals). The second model reflects a government-led strategy to establish direct relationship between state and the users (fisher communities). The third strategy involves a collaboration between government, NGO and researchers working together with fishing communities and interacting with them. A fourth model involves fisher communities assuming true co-management responsibility and achieving partnership status with government, NGO and research agencies. (Ahmed et al 1997). The benefits of community based fisheries management are realized from the following: 1) fishers cooperating in the planning to increase and conserve fish stocks 2) fishers sharing the costs and benefits of improved management 3) fishers managing effectively conflicts among themselves 4) the enhanced position of organized fishers in dealing with other stakeholders 5) the sharing of data and the understanding on the conditions of the fishery by the government and the fishers and 6) emergence of more effective and enforceable rules with a high level of acceptance by the different stakeholders. (Thompson 1999)

Key lessons

The complexities of managing inland fisheries in Bangladesh makes it imperative for a more cooperative model between NGOs, fishing communities, government and research agencies to ensure success in managing these resources. In 1991 with funding from the Ford Foundation ICLARM in partnership with the Government of Bangladesh represented by the Department of Fisheries and a number of local NGOs namely BRAC, Proshika, Caritas and Friends in Village Development Bangladesh implemented a five year project called "Improved Management of Open Water Fisheries". The project emphasized the testing of different arrangements for involving stakeholders for the management of open water fisheries. This involved the participation of NGOs in the

development of local institutions with communities. A key feature of the project is the provision of funds for credit to target poorer fishing households which can help them to develop additional sources of livelihood to compensate for the loss of access to fish resources during closed seasons or in sanctuaries. The main impact of the project is the bringing on board the participation of poorer fishers in decision making and a fairer and more equitable distribution of benefit, and enhancement of overall incomes for poorer fishers. In addition the larger development NGOs have also offered skills in credit training for additional livelihoods and enhanced partnerships with DOF for the transfer of waterbodies to the communities for a lease period of ten years. Moving forward from the experience of the first community based fisheries management project, ICLARM in partnership with NGOs and the Government designed a larger project in 2000 to address gaps encountered in the first project. The second phase project called CBFM2 again works with a range of NGO partners in a range of water bodies to systematically generate evidence of the impacts and effectiveness of local institutions in managing open water inland fisheries.

The key gaps in knowledge that are being addressed by the CBFM2 project are as identified by Thompson and Campbell (2002)

- 1) the issue of the sustainability of the institutional arrangements for community involvement in fisheries management
- 2) The potential for government policy (fisheries and land in particular) and legislative environment to respond to the current work and to support those arrangements
- 3) The attributing of benefits to community involvement in fisheries management rather than to wider development efforts linked to them
- 4) The extent to which the very poor are really benefiting from the work
- 5) The effectiveness of alternative income earning opportunities in the long run
- 6) The potential threat of the future fishers (especially the young who are excluded from the fishery) to the stability of management arrangements
- 7) The technical effectiveness of scaling up arrangements to larger water bodies
- 8) The cost effectiveness of such arrangements
- 9) Understanding the implications of the community involvement on gender roles.

The CBFM2 project that was initiated in 2000 with DFID funding will consider a number of approaches for dealing with the gaps identified above.

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