



## Analysis

## Assessing fishers' empowerment in inland openwater fisheries in Bangladesh

G.M. Shamsul Kabir\*, Tai Shzee Yew, Kusairi Mohd. Noh, Law Siong Hook

Faculty of Economics and Management, Universiti Putra Malaysia, 43400 UPM Serdang, Selangor Darul Ehsan, Malaysia

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## ABSTRACT

The Community Based Fisheries Management (CBFM) approach has made a significant contribution towards improvement of fishers' empowerment of inland openwater fisheries in Bangladesh aiming to manage their resources efficiently. This arrangement introduced CBFM approaches named fisher-led, community-led and women-led approach. A wider range of local institutional arrangements as community based organizations (CBOs) have been established through participatory process with legal entity. Now, the CBOs as local institutions and fishers are more empowered in participation of fishery management under co-management arrangement. The study reveals that there is still lack of institutional arrangement to be achieved at optimum level. This paper presents and assesses the empowerment status of the fisher communities in inland openwater fisheries under co-management arrangement in Bangladesh through Factor analysis and regression model. This study might have policy implication to replicate the community based fishery management approach to promote empowerment for better management.

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## 1. Introduction

The central element of co-management is the empowerment of the community of local resource users (e.g., fishers) by enabling them to participate, control and influence institutional decisions affecting their lives (Maliao et al., 2009). Empowerment through co-management means greater involvement and greater participation of fisher communities and it seeks to empower the weak and less privileged co-management based institutions to allow them to freely participate in and collaborate on management (Berkes et al., 2001). Common property theorists have argued that increasing governance and democracy step up to empower the poor fisher communities rather than strengthen them in power (Ahmed et al., 2006). Empowerment is a mechanism by which community and organizations gain mastery over their affairs (Rappaport, 1987). On the other hand, empowerment is a part of way forward to be challenged and changed institutional arrangement to improve fishers' access and management to their resources (Nunan, 2006). With regard to fishery co-management, Nielson et al. (2004) defined empowerment as a mechanism to give participants a change to influence their own future within the fishing communities. On the other hand, organization practicing empowerment can handle conflict constructively.

In practice, community empowerment and co-management are closely related and if there is no empowerment, there is no co-management. Thus, building community is essential to empowerment, it is essential to co-management. According to Pomeroy and Viswanathan (2003), successful co-management and effective partnerships can occur

when the community is empowered and organized. Furthermore, Sowman et al. (2003) stated that empowerment is secured when resource users are in a position to participate as equal partners in negotiations, give input on management decisions and ultimately achieve self-control. On the other hand, Jentoft et al. (2003) argued that empowerment would be concerned with the redistribution of the power and it works at the level of the group, the community and the nation which interchange between the levels. However, empowerment is both a condition and a goal of fishery co-management, and empowerment must occur at both at an individual and collective level for fishery co-management to become sustainable (Jentoft, 2005). Empowerment even applies to the formation of institutional arrangements for governance.

Capacity building and institutional building are both necessary for empowerment to fishers. Empowerment is concerned with capability building of individual and the community levels in order for them to have greater social awareness, to gain greater autonomy over decision making, to gain greater self-reliance, and in establishing a balance in community power relations (Pomeroy et al., 2001; Wiber et al., 2009). Again, Wiber et al. (2009) reported that inter-community linkages should be encouraged and developed from the outset as this will result in more resilient local capacity. Fishers are empowered when it becomes possible for them to sustainably manage their fishery and capacity building is a means by which this may be accomplished (Jentoft, 2003). Nielson et al. (2004) stated that empowering co-management approach is a demanding concept, as it requires a major restructuring of the institutional and organizational arrangements supporting management and capacity-building at several levels both within government and fishing communities. Institutions constitute the central element in co-management intervention and institutions are important prerequisites

\* Corresponding author. Tel.: +60 88 01711979230.

E-mail address: [gmskabir@gmail.com](mailto:gmskabir@gmail.com) (G.M.S. Kabir).

to effective co-management, and form which decisions are made and collective action is taken (Kalikoski et al., 2002; Noble, 2000). Ostrom (2005) stated that Institutional arrangements such as co-management systems is considered in fishery management as a way of decentralizing resource management decisions, improving participatory democracy and compliance. According to Ostrom (2005), actors are more likely to establish a robust or a viable and stable co-manage regime if the institutional arrangements are characterized by the eight design principles. On the other hand, Institutional arrangements have emerged to secure an expanded role to democratize decision making, foster conflict resolution, and encourage stakeholders' participation (Armitage et al., 2007). Armitage, et al. (2007) also stated that co-management arrangements often involve institutional building at local level in developing countries that results in building institutional capacity, problem solving networking, in short building social capital.

The Community Based Fisheries Management (CBFM) project has been implemented in Bangladesh. It was expected that CBFM approach through improved linkages and partnership among government, NGOs and fisher communities in wetland fishery systems will promote empowerment for management of inland openwater fisheries. Through this intervention, GO-NGO-Fisher partnership and local institutions have been established to accelerate empowerment of the fisher communities. Empirical evidence suggest that fishers have increased empowerment and greater participation in decision-making due to CBFM approach (Thompson, 2004). The objective of this paper is to assess the empowerment status of the fisher communities in inland openwater fisheries under co-management arrangement in Bangladesh. The paper is based on a study in 12 fishing communities within CMFM project sites in Bangladesh. In this study Factor analysis was used to determine factors of local community participation in relation to resource use that are practiced for empowerment according to local community members' opinion. The results of Factor analysis have been used in Regression analysis.

## 2. Bangladesh Inland Fisheries

The inland openwater fisheries in Bangladesh are critically important and complex fisheries. It is a vital resource to its people for their food security and livelihood (Ahmed, 2005). It is one of the richest fishery resources in South Asia. The four million hectares of Inland openwater fisheries in Bangladesh comprise capture fisheries (rivers and estuaries, beels or natural depression, lake, polder and floodplain) and culture fisheries (pond and ditches, oxbow lakes or *baors* and shrimp farms). The term capture fishery is used to refer to the harvesting of fish and prawn populations that are self-reproducing and self sustaining in inland openwater systems. On the other hand, the growing of fish in confined waterbodies like ponds and lakes through aquaculture operations is called culture fishery. According to Muir (2003), fish consumption had fallen by 14% between 1995 and 2002 and inland capture fishery production had fallen by 37% between 1995 and 2002. The contribution of inland openwater fisheries was 63% in 1983–84, but it declined to 41% in 2006–2007 and this is equivalent to a loss of over 7.0 million US dollar (500 million taka) per year (DOF, Department of Fisheires, 2006; ICF, Inland Capture Fisheries Strategy., 2006). The inland openwater fisheries provide a wide range of habitats for the diversity of some 260 species of fish, more than 20 species of shrimp, and numerous other species of plants and animals (Ali, 1991; Nishat et al., 1993; Rahman, 1989). About 40% of freshwater fish species are threatened with national extinction (IUCN, 2000) due to decline in wetlands.

Fish in Bangladesh come from mainly from two sources—inland and marine. Fish production of the country for the year 2007–08 is estimated to be 2.56 million metric tons, 81% of which comes from inland fisheries (constituting 41% from inland open waterbodies and 39% from inland closed waterbodies) and the rest from marine (DOF, Department of Fisheires, 2009). The fishery sector provides full time employment to an estimated 2.0 million fishers, small fish traders, fish transporters,

packers and other related activities and about 14.0 million people are indirectly and partially dependent on fishing (DOF, Department of Fisheires, 2008; World Bank, 1989). About 2.0 million households either fish for a living or are involved in related tasks (World Bank, 1991) and about 80% of rural households catch fish for food or for market in Bangladesh (FAP, Flood Action Plan, 1995; Minkin et al., 1997; Thompson et al., 1999). According to DOF (Department of Fisheires) (2006), more than 75% of all rural households are engaged in seasonal subsistence fishing.

Fish alone contributes about 58% of animal protein intake of the people of Bangladesh (DOF, Department of Fisheires, 2009). The fishery sector contributes about 4.04% to the total export earning, 3.74% to the GDP and 21% to agriculture sector (DOF, Department of Fisheires, 2009). In many cases, poverty itself drives people into the fishery and this can threaten the sustainability of the fishery (Toufique, 1998).

## 3. Management of Inland Openwater Fisheries

The inland openwater fisheries of Bangladesh operate under complex, biological and institutional conditions. Two ministries play major roles in managing country's fisheries —Ministry of Land and Ministry of Fisheries and Livestock. Ministry of Land owns all inland open fishery resources except privately owned waterbodies and is responsible for administration of leasing arrangements and regulation of access rights to these fishery resources. Ministry of Fisheries and Livestock (MOFL) is responsible for conservation, protection and management of fisheries. Department of Fisheries under MOFL is the main government organization mandated to develop this sector in Bangladesh (Farooque, 1997).

Till 1986, Government's administrative arrangement of public inland fisheries comprised allocation of fishing rights to the highest bidder through periodic leasing (1–3 years) on open auction with a preference for fishers' cooperatives. Although the government policy stipulated that cooperative groups of traditional fishers were supposed to get priority in lease allocation, however in practice, control of leases usually came into the hands of local elites, who thereby acquired exclusive rights to determine fishing access to the waterbody (Naqi, 1989; Siddiqui, 1989). Revenue oriented leasing system has increased fishing pressure, destructive and exploitative fishing practice, and the consequence is overexploitation and disincentive to sustainable management of fishery resources (Ahmed et al., 1992; Hossain, 1989; Siddiqui 1989). The leasing system has proven difficult for fisher communities to conserve and enhance the fisheries and the fisher communities have failed to gain property rights mainly because of powerful lessees and their intermediaries (Nabi, 2001). It is argued that the fishers had high transaction costs and were less able to enforce property rights than are socially powerful lessees (Toufique, 1999). This system has led to inequitable distribution of benefits among users, which has deteriorated the economic conditions of the fishers as they are exploited by leaseholders and other local elites (Agüero, 1989). The sharing of benefits to poor fishers is mainly as day labor and they have no role in participatory collective decision-making and management plan.

In order to ensure the better management of the fishery and to protect fishery resources from these exploitative influences, Bangladesh Government introduced the New Fisheries Management Policy (NFMP) in 1986 to address the problems associated with waterbody leasing system and to allocate the fishing rights directly to the genuine fishers (Ahmed et al., 1997). The new system was expected to develop a direct relation between the government and the fishers with the aim to establish a partnership arrangement for resource management and to enable a licensing system that establishes the access rights of genuine fishers. The strategy of the NFMP was to gradually abolish the system of leasing waterbodies to local elites. The experimental NFMP was implemented only in some 257 out of about 12,000 waterbodies (known locally as *jalmohals*) (Ahmed et al., 1997). But the fishers were unable to exclude outsiders including past lessees and elites and they have been subverted

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