BOOKLET 5

Social Capital

COMMUNITY BASED FISHERIES MANAGEMENT

গণপ্রজাতন্ত্রী বাংলাদেশ সরকার

COMMUNITY BASED FISHERIES MANAGEMENT (CBFM)

WorldFish CENTER

BACKGROUND

Globally, community based natural resources management (CBNRM) has emerged as one of the best options for achieving sustainable resource management and economic development in fisheries, as well as forestry and pastoral grazing. Access to natural resources is always keenly contested in the rural economies of developing countries, especially where they are common property resources.

Fishers are amongst the poorest people in Bangladesh. Most possess few capital assets, many are landless and have few alternative livelihood options. Their access to lakes, rivers and floodplains is strongly affected by decisions made by the people who control aquatic resources at the local level, particularly the rich and elites.

The Community Based Fisheries Management Project is an action research project, which the WorldFish Center has been assisting the Department of Fisheries, Bangladesh to implement over the last ten years. The second phase of the project, CBFM-2, has involved the development and testing of a range of community based and co-management models in 116 water bodies through supporting the development of 130 Community Based Organisations (CBOs) in partnership with 11 NGOs.

Social capital is one of the five different types of capital (natural, physical, human, financial and social)[1] that are needed for households to develop sustainable livelihood strategies. It consists of the networks and norms that govern the interactions among individuals, households and communities. Social capital can be categorised into three types: bonding, bridging and linking but the boundaries between these vary across contexts.

Bridging and bonding social capital are both essentially horizontal relationships involving people of more or less equal social standing. There is a mutual connection between bonding and bridging. In a society where a social group is isolated from another group with different characteristics, the resources of the stronger group will not be accessible to the weaker group. In such a situation the weaker group will lack sufficient social capital for bridging but will be able to bond. Linking social capital is more concerned with vertical relationships, connecting people to key political agents, institutions and power bases. Access to linking social capital is clearly vital to the well-being of vulnerable households, especially in poor countries and communities, where too often bankers charge usurious interest rates, the police are corrupt and teachers fail to show up for work (Narayan, 2000).

In the context of the CBFM-2 project in Bangladesh, the partner NGOs took a lead role with the help of the Department of Fisheries (DoF) in facilitating connections between poor fishers and other, more powerful stakeholders. The NGOs were involved throughout the project in the process of identifying genuine fishers, organising them into groups, providing awareness raising and capacity building training and motivating them to manage the fisheries resources. The CBOs also received administrative support from the DoF.

The aim of the study was to see whether poor fishers involved with the CBFM-2 project have benefited through increasing their social capital.

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- Natural capital represents the natural resource stocks from which resource flows useful for livelihoods are derived (e.g. land, water, wildlife, biodiversity, and wider environmental resources).
- Physical capital is the basic infrastructure (transport, shelter, water, energy and communication), the production equipment and means that enable people to pursue their livelihoods;
- Human capital is the skills, knowledge, labour and good health important to the ability to pursue different livelihood strategies;
- Financial capital represents the financial resources which are available to people (whether savings, supplies of credit or regular remittances or pensions) and which provide them with different livelihood options; and
- Social capital represents the social resources (networks, membership of groups, and relationships of trust, access to wider institutions of society) upon which people draw in pursuit of livelihoods.

Methodology

This booklet is based on the study of 240 sample households from four CBFM-2 project water bodies and four control water bodies in the northwest and north central regions of Bangladesh. Household data was collected through structured questionnaires.

Social capital cannot be measured by a single variable so Principal Component Analysis (PCA) was used to identify a set of important variables from nine variables used in the study. PCA was used to extract the maximum amount of variance to calculate factor loading. Factor loadings are the correlation of each variable and the factor loading indicates the degree of correspondence between the variable and the factor.

Among the variables, four important variables were selected based on them having higher factor loadings. The weighed sum of percentage contribution of each of the selected variables was used to compute factor scores. As a rule of thumb, a variable with a coefficient of absolute value above 0.5 is said to be a dominating factor.

STUDY FINDINGS

A Social Capital Index was constructed using the PCA method. The factor scores were weighed according to factor loadings. Four key variables, with loadings above 0.5, were identified for the Social Capital Index (Table 1). The most important variables for the social capital factor are: membership in organisations, participation in decision making, level of knowledge and influence on access to resources.

Table 1: Social Capital Index: Factor Pattern

Performance Indicator	Factor Loading	Score
Membership of fishers in formal and informal organisations	.693	0.265
Participation of fishers in decision making	.685	0.262
Level of knowledge	.622	0.238
Influence over resources use	.610	0.235
Sum	2.61	1.000

Extraction Method: Principal Component Analysis

Fishers' involvement in formal and informal organisations

Social linkages among villagers and community leaders and their involvement in different associations or institutions are commonly used as indicators of social capital. In the CBFM-2 study, the most dominant factor was the membership of fishers in formal and non-formal organisations (0.693).

In the CBFM-2 study sites, there are ten operating NGOs whose staff make up almost 28 percent of the total number of household members in the villages (Ali *et al.* 2003). The study also recorded the existence of 16 different associations and organisations (formal and informal) at the village level. These associations and organisations were broadly categorised into three groups: production oriented groups (NGOs and other local societies), social and cultural groups (school, cultural, sports etc.) and religious committees (mosque, temple etc.), however, it was found that most of the social and cultural groups were inactive. In the CBFM-2 project areas, many household heads are involved in more than one organisation whereas in non-project areas, household heads tend to be registered with fewer organisations (Islam, 2005).

In project areas, poor fishers were attracted to the NGOs mainly for micro credit. In addition, they also communicate continuously with NGO staff when they are being organised into groups, during information dissemination and the sharing of knowledge and ideas. The NGO staff also often interact with local elites during implementation of the CBFM-2 project.

Religious institutions such as mosques and temples were found to be equally as important as the production related organisations such as NGOs. Only very few household members were involved with social and cultural organisations such as school committees, political groups, cultural groups, sports clubs and youth groups.

Participation of fishers in decision making

The key objective of the CBFM-2 project was to ensure greater participation of the poor fishers in decision making and a fairer distribution of benefits with less dominance by lease holders and money lenders. The expectation was that this could be achieved by empowering the poor fishers through awareness building programs, so that they can best decide on how to manage their resources.

In the study sites, a higher loading (0.685) was recorded (Table 1) indicating that fishers are now more actively involved in decision making processes related to fisheries management. In CBFM-2 project areas, each CBO appointed an executive committee which made key decisions on water body management in consultation with the partner NGO and local DoF staff. These Beel Management Committees (BMCs) were platforms for fishers to participate and voice their opinions. On the whole, BMC leaders demonstrated their capacity to participate in consultations with the local government administration and political leaders on issues related to fisheries management.

Attendance at meetings and participation in decision making are important indicators to assess the degree of empowerment of fishers. In the CBFM-2 project areas, it was observed that community members attended an average of four meetings in the last 12 months, while community members in non-project areas attended only one meeting in 12 months. Clearly, the establishment of community level institutions was an important means of involving fishers in decision making processes with other stakeholders.

Fishers' knowledge of resource management

Another important indicator that was used to measure social capital was the level of fishers' knowledge of resource management. Many of the fishers in project areas are illiterate, however, they have indigenous knowledge of fisheries and fishing skills as demonstrated by the high loading (0.622) in Table 1. Through the CBFM-2 project, partner NGOs organised training on a range of subjects for the CBOs including social awareness, skill enhancement, adult education, health and nutrition and leadership. These have made clear impacts on the skills and attitudes of household members and the opportunities available for enhancing their livelihoods. Skill enhancement training was focused on developing alternative income generation, such as fish culture and other self employment activities. There was improved understanding of the importance of natural fish stock conservation which is evident in the construction of sanctuaries and the observance of closed seasons in most of the project water bodies. The level of health awareness has also increased in almost all the study sites.

Fishers influence over resource use

Fishers' influence over resource use was also used to measure social capital. The study recorded a stronger influence of fishers over the management of their fisheries resources as shown in Table 1. In rural Bangladesh, most of the productive fishing grounds are controlled by influentials or elite groups who hold the lease to the water bodies. Through the CBFM-2 project, user rights were transferred from the influential leaseholders to the project CBOs. This was a slow process because influential leaseholders often used their political connections and legal actions in the courts to attempt to keep their exclusive access to the fisheries (Dickson and Ahmed, 2006). Conflicts between previous leaseholders and fisher groups were common in the project sites. Experienced field staff from the DoF and NGOs played a key role in managing and resolving these conflicts through linking village leaders, elites and fishers. Through the support of the project, the CBOs were able to take control over the water bodies and make decisions about resource use and livelihood strategies. The CBO executive committees were able to decide on sustainable fisheries management rules and, in most circumstances, enforce them with the help of the DoF, the partner NGOs and other key local stakeholders. The sharing of enforcement duties between the DoF and the local community reduced non-compliance issues - an indication that fishers have become more responsible over the use of aquatic resources.

The extent and ease of interaction between the local community and government officials is an indicator of the empowerment of CBFM-2 fishers. The respondent households were asked about the number of instances that their socio-political problems were taken up with local and central government officials. A higher percentage of households from CBFM-2 closed *beels* reported that they requested local government officials at least once to resolve problems such as construction or repair of village roads, maintenance of irrigation canals, requests for electricity supply, sinking of tube-wells for drinking water, and requests for a reduction in the cost of fisheries leases. The study showed that CBFM-2 participants in both closed and open *beels* (22% and 37% respectively) reported that all the problems they took up with the government were resolved. This compares to a much lower rate of resolution in non-project areas (closed *beels* 15%, open *beels* 9%). This indicates that communities implementing the CBFM-2 approach are more successful in influencing government officials to resolve their problems.

Improving community trust and respect

The quality of institutions is important for building social capital. Corruption may lead to negative social capital which in turn reduces economic growth. Trust and norms of civic cooperation are stronger in countries with formal institutions that effectively protect property rights. Individuals within communities with higher trust, tend to be less exploited in terms of economic transactions. In the CBFM-2 project, one of the roles of the CBOs was to establish trust between community members, regardless of their social standing, and leading to improved social capital. An example of this in the study was the strong influence of elites at the local level. Reducing their influence does not necessarily mean that the socio-economic conditions of the community will be improved. However in many of the CBFM-2 study sites, poor fishers had better access to interest free credit during crisis periods by the end of the project indicating better cooperation and mutual respect among the villagers. In non-project sites, the level of trust between poor and rich groups did not improve over the project period.

Better management of conflicts

CBOs were able to resolve many fisheries related conflicts and other social issues. Most of the conflicts were usually resolved through negotiation between the affected parties or through "*salish*" (village court) presided over by community leaders. Court cases are filed when conflicts are beyond the control of community leaders. The proportion of serious conflicts in CBFM-2 project sites resolved through *salish* increased over the project period while in non-project areas the incidence of court cases increased from 13 percent in 2002 to 17 percent in 2006. (Table 2)

Table 2: Household attitudes towards conflict (% of conflict situations)

Type of conflict		Project sites		Non-project sites	
		2002	2006	2002	2006
Quarrel	Resolve by negotiation	79	71	83	89
	Call for *salish*	21	29	17	11
Serious conflict	Resolve by negotiation	0	0	4	0
	Call for *salish*	75	78	83	83
	File case in the court	25	22	13	17

Increased participation in community activities

The degree of involvement in community activities is an important indicator of the level of participation and unity among villagers. In the 'top down' management culture of Bangladesh, involvement of local people in the development activities is often overlooked, for example, important local government officials such as the UP Chairman may not be clearly informed about development work due to a lack of coordination between the different government agencies. However in the rural areas, people usually support each other during crisis periods such as floods and cyclones.

In the CBFM-2 project there was clear evidence of increased involvement in community activities. CBO members voluntarily guarded sanctuaries and *beels* with stocked fish, reducing the level of illegal poaching. In addition, many of the CBOs participated in habitat restoration work, clearing away water hyacinth and excessive weed growth from some water bodies before stocking and management. According to the social capital study, CBO members contributed an average of four working days per year in project sites while in the non-project sites the contribution was less than two working days.

Social capital in livelihoods context

In livelihoods analysis there are five different types of livelihood assets; social, physical, human, financial and natural. A range of key indicators were used to estimate household's access to livelihood assets in CBFM-2 and control sites. These were monetary (taka) value for physical capital, the number of years that the household head was in full-time education for human capital, the average amount of credit received by each household for financial capital and the area used for fishing for natural capital. The results shown in table 3 indicate that households in project areas have better access to livelihood assets than households in control sites, suggesting that the CBFM-2 project has improved livelihoods.

Table 3: Household access to livelihood assets in project and non-project areas

	Project		Non-project		
Variables	Mean	S. D	Mean	S. D.	% Difference
Social capital index	4.0	2.0	2.8	1.3	44%
Physical capital index (1000)	5.8	6.4	5.3	6.9	9.8%
Human capital index - Education of household head (years)	2.4	3.2	2.2	3.2	1.2%
Financial capital index - Credit received by household (1000 Taka)	6.0	5.6	3.8	4.1	58%
Natural capital index-Fishing area of household (10 acre)	2.6	2.6	1.8	2.5	47%

Number of Observations: Project = 120 and Non-project = 120

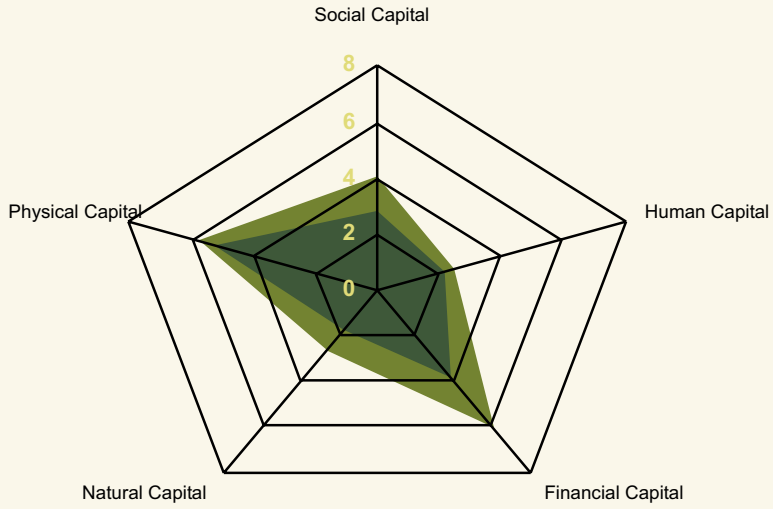

Figure 1: Access to household assets

The results of livelihood analysis are displayed in Figure 1. Better access to assets is shown by a greater distance from the centre of the pentagon along the asset axes. Overall, the diagram shows that the greatest differences between project and non-project areas are in social capital, financial capital and natural capital.

CONCLUSIONS AND RECOMMENDATIONS

The major implication of this study is that the CBFM approach improves the social capital of participating fisher groups. The findings of this study supports the establishment of community based organisations and highlghts the need for participatory management policies which will ensure the sustainability of CBFM approaches.

The establishment of community based organisations such as the *Beel* Management Committees improve social networking between rural households and government agencies. In the project, the key points for interaction were in training sessions, workshops and regular meetings. This allows communities to get involved in the fisheries management decision making process. It is important that CBOs function as transparently as possible with regularly elected committees and involving a range of stakeholders.

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