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**Social Capital and Household Well-being in Fishers
Community- A survey of Community Based Fisheries
Management (CBFM) Project in Rural Bangladesh.**

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ABSTRACT

The intention of present thesis was to investigate the linkages between social capital and household's well-beings in rural fishing community in which a community based a fisher's management project (CBFM) promoted some essential element of social capital such as group association life, level of trust, and mutually benefits collective actions. This paper has brought attention to role of CBFM in creating social capital which improves poor fishers household's income activities, calculated by access to assets, access to credit, and collective actions. It was also investigated how can CBFM project activities improve their non-monitory activity health, education.

To compare with CBFM beneficiaries households with non-member's I find that the well-being in trams of income and non-income activities had higher than non-members households. It as also argued that micro-credit programmes improve the women empowerment positions and socio-economic conditions.

This analysis was based on fieldwork conducted form Tangial district in central north of Bangladesh, 2005 through by household's survey of beneficiaries members of CBFM and without CBFM by semi structure questionnaires. The secondary data collected from official document, & Internets. The study identifies themes that the CBFM project activities improve poor fisher's household's well-being by creating social capital at households and community levels.

Key Words: Social Capital, Household well-beings, Community Based Fisheries Management (CBFM)

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1. Introduction

The concept of 'social capital' has attracted considerable interest in the academic discourse during last decade. It is now over a decade the notion of 'social capital' has been seriously considered as a determining factor in economic growth and development and the reduction of poverty. Here Social capital can be defined as those features of social structures-such as trust, norms, and sanctions, appropriable social institutions, and information channels that collective action (Coleman, 1990, Putnam et al, 1993,). Social capital is a multifaceted phenomenon and it affects the household well-being on many levels such as macro, meso and micro. Among other views of social capital, the notion can be considered as a by-product of social relationships getting up from reciprocal exchanges between members involved in social associations or networks for the achievement of common goals (Kawachi et al, 1997). Wide-ranging research has been conducted on the links between social capital and social and economic growth and development. The research findings generally find positive association of social capital and development (Knack & Keefer, 1997)

At the view point of development discourse the role of social capital is important for lowering transaction cost, mutually beneficial action or collective action leading to positive some outcome and in this process social capital enables accumulating of other types of capital for poverty reduction. Social capital is the 'glue', bound of trust that hold different types of groups and societies together and enable them to get things done(Ismail Serageldin,1998).But there are few empirical studies in Bangladesh that looked into the linkages between social capital, household well being and poverty. Bangladesh is one of the world's poorest countries and the level of poverty higher in rural areas. In the last two decades some progress making in overall of poverty situation but the level of poverty still high by any standard and most of are rural people. While the proximate cause of her poverty seems to be imbalance between population and exiting resources, inefficient institution, lack of active groups and network and collective actions. Therefore I am interest to investigate the linkages between social capital and on household well-beings as a proxy indicator of poverty in rural Bangladesh through by community based organisation. A social capital study of poor fishers household's welfare of my country side in Dhanbari Thana, Madhupur upazilla in Tangail district could illuminate this situation and investigate how the poor fishermen would aided by increasing their access to social capital through by community based organization(CBO) actions.

This thesis presents and analyses the idea that CBFM organization have a role to play in creation of social capital and have a strong affect on poor fisheries household's welfare. Using both primary and secondary data, collected during a fieldtrip to open fishing water bodies in rural Bangladesh, I make a truthful attempt to substantiate this nation.

The paper is organised into eight sections. The second section of the paper discusses on the recent literature reviews finding on social capital and its effect on economic performance, yields a definition of social capital and described a general conceptual framework. Section three provides the Conceptual Framework, methods and measurement , measurement index of social capital for this study, field work tools for measurement of social capital. In section four gives the country profiles and background of CBFM.. Section five yields an analysis of primary data at three level: village level, organisational level,(CBFM), and households levels. The impact of micro-credit programs by CBFM on women empowerment also discussed in section five. The secondary data analysis in section six. In section seven,

provided the main findings on my survey data. In the last section contented the conclusion and summary of the whole paper.

1.1 Purpose and research questions of the Study:

The goal of my thesis is the understanding of the significance of social capital for poor fishers' household welfare and poverty in the rural Bangladesh. The general objective of this report is to investigate the CBFM project role in the creation of social capital.

More specific, the purpose of my study is to investigate how a community based organization(CBO) activities promote social capital which has a strong effect on household's welfare. I would like to raise the question- whether social capital creating by CB has any positive role in creating or enhancing opportunities for rural households that increase well-being of rural fisher's inhabitants in Bangladesh through improvement on their income earning, sharing information, collective action, health and education that eventually reduce poverty. Another purpose of study is to investigate how social capital has been linked to CBFM's success or failure by improving households well-being?

The scope of the filed study is limited in five villages in rural villages. By looking at villages with CBFM and without CBFM activities I will measure role of CBOs in the creation of social capital and assume that CBO activities build up social capital indicators which will improve household welfare. I used three indicators of social capital for measuring :

The indicators are:

- **an indicator of association life(membership in groups& network),**
- **an indicator of trust(output or input indicator),**
- **an indicator Mutually beneficial collective action.**

These three types of indicators measure social capital from different points of views. Because of their different perspectives they, taken together, provide a valid for measurement of social capital as well as its impacts.

1.2. Objective of my study:

1.2.1. The main objectives of the study are as follows:

- To investigate the role of CBFM project in creating social capital indicators.
- To assessment the effect of social capital household's well being in respect of access to assets, access to collective action.
- To examine the probable changes of women empowerment due to women's access to micro – credit.

1.2.2. The broad aim of my study to analyzing the contribution of social capital to household well-being will be done in the context of a simple conceptual framework which views at the local level CBOs creating social capital for poor fisher households for generating income and making consumption possible. To analysis the role of social capital on household's welfare, mainly I used qualitative methods. The main research question of my study is :‘Are households who have a membership of CBFM project have high levels of social capital better off than households non members with low level of social capital ?

1.2.3. Specific research questions

- How can the local association life of CBFM improve the household's welfare in case of access to assets, access to credit and collective action?
- What are the impacts of CBFM project in poor fisher household's well-being in case of access to health, access to education.
- What are the impacts of micro-credit programmes by CBFM on socio-economic condition for women?

1.3 Methodology:

This study integrates quantitative and qualitative methodologies, the quantitative research consisting of recent literature review of social capital (see ch.2), and the qualitative research undergoing a field study (ch 5 & 6). This study only measure the three indicators of social capital at micro level where the focal point is structural and sometime cognitive social capital at the household level and how this types of social capital interact at the community, institution and households levels. Social capital will be measure by interviewing selected administrative personnel in vital institutions(CBFM), fisher households , villages leaders in the selected water body in my rural countryside.

1.3.1 Data Collection Methods

My proposed study will be broadly a qualitative research. For conducting my proposed research I will employ the integrate questionnaire for the measurement of social capital (SC-IQ) that developed by the World Bank (Grootaert et al, 2004) and it will be required qualitative and quantitative data on various form of social capital indicators along with information on household's socio-demographic characteristics. A household survey will be conducted through semi-structured questionnaires. Analyzing the contribution of social capital to household well-being will be done in the context of a simple conceptual framework which views social capital as one class of assets available to households for generating income and making consumption possible.

1.3.2. Source of data:

Our study focuses on cognitive and structural social capital at the micro level and the ways in which social capital interacts at the institutional, community and household levels. The study based on both primary and secondary data. The primary data collected from five villages around a water body by interviews with beneficiaries households members of CBFM and non-member. The secondary date consisted official documents , academic papers and articles by world fish centre, Dhaka. A effort was made to map out the presence of trust, association life and mutually beneficial collective action (MBCA) in the villages and to use them as indicators to measure the concept of social capital. (www.worldfishcenter.org)

1.3.3 Reliability and validity and generalisation of methods:

The reliability and validity of the interviews findings depends on interviews technique, types of research questions. Here, reliability refers to how consistent the result are and validity means whether an interviews study investigates what is intentioned to be investigated.(Kvale, 1996). The qualitative research is basically depends on the question of reliability and validity. The result of qualitative study depends on how

can we asking a good question during data collection process (Yin, 2003). To investigate the role of CBFM to creating households level social capital which improve the poor fishers households well-being in respect of income activities and other non-monitory activities, I was selected three villages for investigated the CBFM activities and other control villages for comparing the impact result. To collected data, I used three different types of question for three respondents such as one for villages chairman, one for households and another for administration officer of CBFM. For getting, household's level social capital , socio-economic conditions, demographic information, well-beings a household survey was conducted by semi-structured questionnaires. organization and non members of CBFM will be collect.. I was randomly selected 20 male beneficiaries' household members from male group and 20 female member from female group from CBFM villages. Without CBFM 22 households was selected from the control two villages which informant supplemented with information on the local economy, local society and local institutions by semi-structure questions. At the institution level, I was collected data from the executive groups leader of CBFM at three villages by in depth –study. Therefore, my interviews questions round upon different aspect of diverse issues about social capital, CBFM activities, and households well-beings.

My sample involved the fishers households from different income level, different age, different demographical condition, socio-economic conditions. Thus the sample was quite little but mean while very diversified at it inside with reference to several aspects. Due to time constraint and sample restriction to investigate the role of CBFM to creating social capital and improving households well being, to justifies the hypothesis, Although it is difficult or perhaps even sometime impossible, to be complete objective, the goal has been to analysis the material with an unprejudiced mind. I am aware to carry out perfect information to analysis my research questions. Moreover as a women, simple attitude, I could easily interpreted my self and my research goal with my mother-tongue. I have no need interpreter to carry out information and the language between me and interviews was same which was benefits for my but some time it also problem for research in respect of validate questions try to minimise the gender bias by taking interviews both for male and female group members of CBFM .

I will apply analytical generalisation methods (judgement, compare my result with existing theories) (Kvale, 1996; p232) for analysis results. Finally, my observations considering whether there will be any correlation between social capital by CBFM activities and household well-being, and find out the effect of social capital on households non-monitory well-beings. I think my methodological basis and sample selection criteria make for reliability.

Section two

2. Review of literature on social capital

2.1. Definition of social capital:

Social capital is not a single entity, but the combination of a variety of different entities with two entities in common: they all consist of some aspect of social structure such as social groups, network, institution etc they facilitate certain action of actors-where persons or corporate actors-within the structure.(Dasgupta; 2000). Like other form of capital, social capital is also a one kind of productive asset, making possible the

achievement of certain ends. According to Uphoff(1999) social networks require investment of time, money, information and prestige that yield a benefit flow of employment, income, sociability, knowledge and other payoffs. The memberships of groups interact to produce collective action that is theoretical to bring down the transaction cost and lead to mutually beneficial or positive-sum outcome.

2.2. Dimensions of social capital:

Social capital is a multi-dimension concepts and it has different dimensions. To be able to realize social capital a division into different dimensions is suitable. Looking at the figure above, the framework of social capital is construct around two key dimensions of social capital: its scope such as micro and macro level of social capital and its forms such as cognitive and structural .Cognitive form of social capital is more tangible than structural form of social capital.

2.2.1. Macro level:

Social capital is a relevant concept at the micro, meso and macro levels. The macro level social capital refers to the institutional context in which organization operate. At the macro level, social capital includes institutions such as government, the rule of law, civil and political liberties etc. More broadly macro level refers to formal relationships, such as political regime, rules of law, legal frameworks, level of decentralization and level of participation in the policy formulation process (krisha, Anirudh and Shrader, Eizabeth 1999). There is a overwhelming evidence that such macro level social capital has a measurable impact on nation economic performance (knack, 1999). Like most third world countries Bangladesh has a lack of well functioning institutions, is infrastructure-starved and government-deficient. The cause of rural poverty also depends on lack of well functioning institution at the local level. To carry about effective changes for the rural poor, rural development requires not only financial means but institutional inter-link as well.

2.2.2. Micro level

At the micro and meso level of social capital refers to the networks and norms that govern interaction among individuals households and communities, such networks are often but not necessary given structure through the creation of local association or local institutions. The micro level refers to the contribution of horizontal organizations and social networks to development. Two types of social capital can be distinguished on the micro level: structure and cognitive. In a traditional society like rural Bangladesh where the formal institution has a lack of efficiency and trustworthiness, groups and networks at the micro level are of great importance for the economical growth. People tend to be withdraw from the formal economy and more rely upon multiple informal economics to satisfy their needs. Informal activities include growing food ,repairing houses and exchanging help with friends. At the base there is a higher level of social capital society consisting of strong informal networks relying on trust between friends and on a face to face interaction. In these types of societies this social economy exists out of necessary while in a well-function of friendships (Jonsson and Klevas 2002).

2.2.3. Structure form of social capital:

The structure form of social capital, in the form of association and networks help to disseminate information, reduces opportunistic behaviour, and facilitates collective decision-making. But the

effectiveness of structure social capital depends upon groups structure, their membership, the way of function. Whether, a high degree of internal diversity of organization according to kinship, gender age, occupation, education and income is a positive factor or negative factor from point of social capital. On the one hand internally homogeneous association would like it easier for members to trust each other, to share information, and to reach decision but the members may have fewer opportunities for exchanges information. In case of rural Bangladesh, internally homogeneous association has more possibility to make easier to bring collective action for higher level of benefits than internally diverse association.(Grootaert, 2004, p11)

2.2.4. Cognitive Form of Social Capital:

The cognitive form of social capital is more subjective than structure form of social capital and hence difficult to measure since its depends on people think, believes, and fell. The values of cognitive social capita vary with people to people, society to society, tradition to tradition, culture to culture. Therefore, ts deals with norms, attitudes, values and beliefs. In comparison to structure social capital the cognitive form is not easily changed, since it resides within people minds. The mutually benefits collective action with in a community or groups depends on the level of whole community shared norms, values, attitudes and beliefs and trust. The groups achievement and activities, intention and values, which attach the members together, are of great importance,, indicating whether the group in question put in to or subtract from the social capital stock. Either the society will benefit or be worse off by the co-operation.

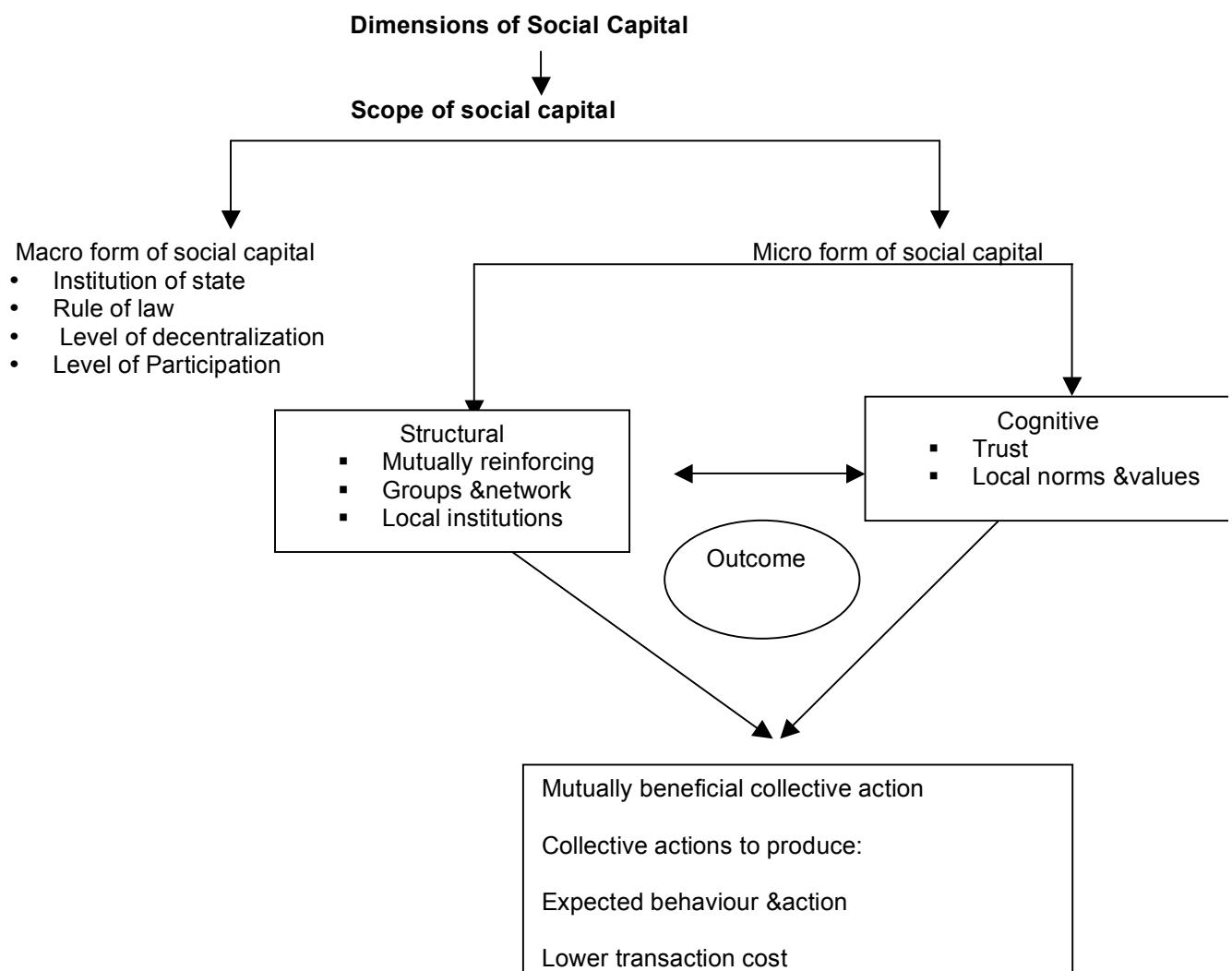


Figure: Dimension of Social Capital

Source: Grootaert & van Bastelaer 2001, Rita Afsar(2004)

2.3. Social Capital and Economic Performance:

At the country level, the relationship between social capital and economic performance depends on the various dimensions of governance and civil society. The nature of group's activities and goals, and their membership's composition, are possibly more crucial for economic welfare than the simple number of groups memberships. A growing body of research has been conducted on the links between individual (micro) and area level of social capital with population health, education, social safety net etc. It has a significant role in improving households well-being and reducing poverty.(Knack and Keefer, 1997). In a recent work, Durlauf & Fafchamps(2004) distinguish three main underlying ideas of social capital as: Firstly, social capital generates positive externalities for members of a groups; secondly, these externalities are achieved to share social , trust ,norms and values and their effects on effect on expectations and behaviour ; finally shared trust, norms and values arise from informal forms of organizations based on social networks and association.

Moreover, social capital is not a universal remedy as it may always generate better outcomes. Social capital researchers have been criticized for failing to consider such as negative outcomes. Social capital can sometimes facilitate negative or perverse consequences. Portes(1998) acknowledged four instances of negative or perverse consequences: exclusion of outsiders from resources controlled by network members ,excess claims on successful members by free-riding fellow members, restrictions on individual freedoms(particularly in closely bonded networks), and the downward levelling of norms, which may block members of an historically oppressed group from participating in mainstream society.

Durlauf & Fafchamps(2004) contend that the benefits that social capital creates for one group may disadvantage another, so that the net effect on society need not be positive. In addition, because of the extraordinary importance of social capital externalities (positive and negative), the path from individual to aggregate social capital may be difficult to identify(Glaeser et al, 2002). According to Knack(1999) under the survey study of cross country evidence, indicate that the role of social capital on poverty reduction is positive, the higher level of social capital are associated with subsequent improvements in the distribution of income and finally its reducing poverty(, Kanck. S. 1999. Social Capital, Growth and Poverty: A Survey of Cross Country Evidence)

In respect of world value of survey, the outcome of social capital to reduce poverty has been positive. Social capital reduces poverty rates and improves income inequality. By improving the institution rules or

law, civil society capital that means common norms, values, trust, and association life are play a important role to reduces poverty and income inequality in a developing country.(see <http://wvs.isr.umich.edu>)

2.4 Conclusion:

According to recent literature, social capital generate production and economic growth by reducing transaction costs associated with co-ordination of grouping, rules, and trust and collective action. Social capital distinguished on micro, maso , macro level. A high level of social capital to carry out collective actions, successful collective action depends of group, trust, norms and efficient networks. The local level organization help to build up linking social capital that promote collective action. The concept of social capital that has been applied in studies on community based fishing management organization(CBFM) in rural Bangladesh, where structure and cognitive forms of social capital established rules and procedures with in social networks, norms, values and attitudes(Krishna and Uphoff, 1999)

Section three

3. Conceptual Framework and Measurement

3.1 Conceptual Framework

The conceptual framework of my study derives from some review of literature on social capital. There is a growing attentions is given to the role of social capital in affecting the well being of households such as access to health, access to education, level of income and the level of development of local communities. The important recognition that social capital is an input in a households production function has major implication for household's well-beings & poverty reduction. Whilst social capital is formed, functions and sustain with trust and it requires investment in time with in a community manifested through social capital. Trust and norms are important for any society to solve its resource allocation problem(Uphoff and Krishna 1999) and on the other hand social networks requires investment of time , money, information that can yield a benefit flow of households income(Grantovetter 1985). In a tradition society to solve its resource allocation problem and for rules to be enforced there must be trust among users. According to Grantovette(1985) all economic behaviour is embedded in networks of social relations which is based on trust and economic transactions can turn out to be more efficient of social capital.

Following my conceptual framework, I assume social capital is one kind of capital or assets in a household's production function and that produce a stream of benefits and the elements of benefits such as information sharing, lowering transaction cost and mutually beneficial collective actions for a specific goal. Therefore, in this framework, to measure social capital at the micro(individual and households) and maso(communities) level, I have chooses three indicator of social capital and the Indicators of social capital are :

- i) Association life in a community based organization(membership in groups& network),**
- ii) The level of trust in a community(output or input indicator),**
- iii) Mutually beneficial collective action(MBCA).**

These three indicator measure social capital at different points of views and than taking together, provide a valid base for the measurement of social capital as well as its impact.

Uphoff(1999) also explained that collective action can be viewed as benefit from the given stock of social capital which benefit influence on development as a result of the interaction between influence on development as a result of the interaction between two types of social capital-structure and cognitive. Here, structure social capital facilities information sharing, collective action, decision making through established roles, social networks, and other social structures supplemented by rules, procedures and precedents , on the other hand, cognitive social capital refers to shared norms, values, trust, attitudes and beliefs. The both form of social capital are important for resolving common pool resource management problem (Afsar, 2004). But not all economist are ready to treat them as a part with physical, natural, human capital (Coleman,J.S, 1990). The reason does not only lie with lack of relevance to economic development but also related with its measurement problem. Actually, the impact on trust, norms and social networks have an economic performance is, especially, more difficult to measure in aggregate model than disaggregate model. Due to the complex relationship between different components of social capital to the intangible nature of some variables and the level at which they may operate (Uphoff, N. 1999, Knack and Keefer 1970). Therefore social capital plays significant role in sharing the outcomes of economic actors at both micro and macro levels and it likely have considerable impact on the poor (Ahmad ,2004)

There is a growing number of case studies which document that local association play a key role in common pool resource management development and management of wildlife resources, to the provision of credit to the poor and implementation of health services (Grootaert 1999). The local way association performs their centred useful role in three mechanisms: the sharing of information among association members, the reduction of opportunistic behaviour, and the facilitation of collective decision-making (Grootaert 1997; Collier, 1998).

3.2 Measurement of social capital:

I would like to measure social capital through household survey at the community level and households level. In this study measure social capital at the micro level-that is at the level of households and individuals and also meso levels- that is at the community level. Social capital is difficult to measure directly because it has been a multidimensional nature . It is not easy to identifies a unique measurement indicators that will be universally valid since countries and even regions differ in social, economical and cultural context. But the indicators that are useful in analytical social capital will somehow remain fairly invariable even investigation shifts from one context to another. The reason lies with problem of measurement. The impact trust, norms and social networks have on economic performances, especially difficult to measure in aggregate models. The measurement difficulties arise due to the complex relationship between different components of social capital, to the intangible nature of some variables and the level at which they may operate (Afsar, 2004). Uphoff(1999) address that the measurement problems are closely associated with the definition .

However, the most accepted a method that has been used for measuring social capital goes via survey data collection. Here, a number of data source like world value survey by university of Michigains and the social capital assessment tool (SCAT) adopted by world bank are useful. The SCAT tools seeks to measure the level of social capital and its relationship to other development indicators in the area of

economic growth, poverty alleviation and inequality reduction. The SCAT assesses social capital in three areas, producing a community profile, a households survey and an organization profile. In these survey a series of questions are asked concerning social groups, networks, trust, norms and civic engagement etc. (Krishna and Shrader, 2000)

3.3. Measurement Index

Cognitive social capital at household's level was measured from the level of trust and the degree of positive attitudinal disposition towards the village. The index was based on weighted average of the responses on the degree of trust the households have on the member of formal institution like CBOs and informal members such as relative, neighbours, family member. Index of cognitive Social capital at village level is constructed by combining average score on the percent of households that perceived villagers trust each other in leading and borrowing. For measuring structural social capital at household level, I used voluntary participation in decision making as an index of social capital without giving any weight to the types of decision taking under CBO programmes and we assume that members voluntarily participating in the CBO decision making process is likely to yield greater social capital than involuntary and inactive members.

On the other hand, collective action was measured from the weighted average of frequency of the collective action by the households members for the development of village during in the last 12 months obtained on with the highest score assign to 'most frequently' and lowest to 'never time' or once time. To measure the degree of community participating during normal and crisis periods, we used with very high obtaining the highest and very low obtaining the lowest score of social capital. (Afsar, R, 2004)

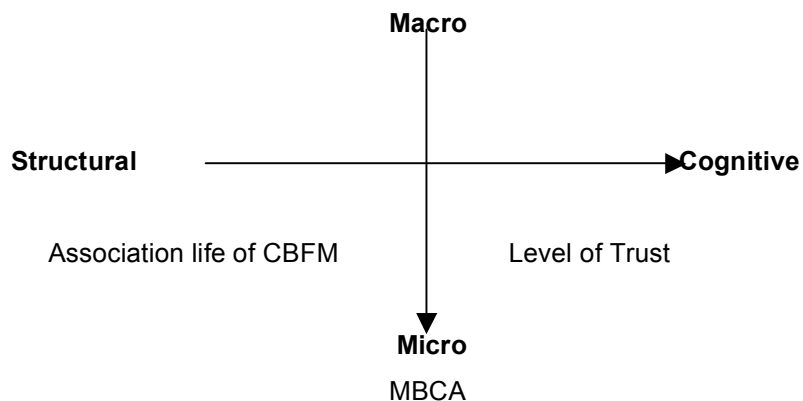


Figure 2. Indicators of Social capital

Given the discussion above and conceptual framework, the three indicators of social capital, association life of institution, trust and mutually beneficial collective action have been set up proven adequate for measuring social capital in this field study. They measure social capital from different points of views. Because of their different perspectives they, taken together, provide a valid base for the measurement of social capital as well as its impacts (Grootaert, 2000). However it is really difficult to identify a few "best" indicators that can be used everywhere.

3.4 Profiles of Sample areas, sample households and questionnaires

I was doing a survey of Hamil Beel water body under the CBFM project is located in Dhanbari Thana in Mamadhupur upazila, Tangail district in north central Bangladesh. Five villages were selected for scrutiny right before leaving for fieldwork (Bilashpur, Gobindacharan, Ramkrishanabari, Tahasa & Gonipur) . Under the CBFM project six fisher groups of 138 male member and two women's groups of 37 members (out of total 957 fisher households) living around at Hamil Beel. There were three villages such as Bilashpur, Ramkrishanabari, Gobindacharan around the water body Hamil Beel where CBFM project worked. One village leader and ten beneficiarie's households were questioned in each village. Every village were visited two tomes: in my first visited, I was interviews the village leader, CBFM official member and on my second visit I proved the households questionnaires for CBFM members and without CBFM members of households. I collected the information by semi-structure questionnaires (see appendix) I was randomly selected beneficiaries' household members from 6 male groups in and 2 female group .

Three types of questionnaires were constructed before going on field study with the help of World Fish Centre , Dhaka, and world bank households survey questionnaires for social capital(<http://www.worldbank.org/wbp/scapital/methods/index.htm>.) . Although I targeted three element for scrutiny: CBFM staff, village chairman, and households member of CBFM and without CBFM for measuring social capital on the three levels: institutional level, community and households levels. Questionnaire-1 was high light by interviewing village leader which provided information on community characteristic. This informant supplemented with information on the local economy, local society and local institutions.. At the institution level, questionnaires-2 completed by interviewing staff of CBFM with help of semi-structure, and follow-up questions. Questionnaires-3, the household questionnaire, was probed by interviewing household's member. The head of each household answered the households question. At Bilashpur village, only female member of CBFM answered the household questions. The most available members in each village were thus interviewed. It is also valuable to point that about a more dozen of people followed the interviewing and added comments, which may have caught up the village leaders and households members speaking freely with in confidence.

Section four

4. Description of the Study Area-Bangladesh and CBFM project

The following section contains a county presentation of Bangladesh with special highlighting on its economic condition and development, the poverty situations , This section also contains the importance of open fishers sector for our economy . In the last part of this section described the background of CBFM project and role of CBFM activities to creating social capital indicators .

4.1 Bangladesh –an outline

Bangladesh is a republic with parliamentary democracy , was independence in 1971. The population growth rate higher (1.7 %), with more than half living in poverty, many of them landless around fifty percent of rural households are landless. Most of rural people are poor, about 74 percent of total the population live in rural areas, but currently this figure reducing through the urbanization. During the last decade Bangladesh has been made some progress in human development, according to world bank data base information, around 97 percent of total population have access to water and forty-eight percent of the total

population with access to sanitation. (<http://devdata.worldbank.org/external>)

4.2. Poverty Reduction:

Poverty is a crucial problem and poverty reduction has therefore, been given the top most priority in the development plans of the country. According to the report on household Income and Expenditure Survey 2000, published by BBS, the absolute poverty at national level was 44% in 2000 and hardcore poverty was 20% in the same year. But the incidence of poverty in respect of occupation is higher in rural areas than urban area. According to BBS survey, by using the lower poverty line, the highest incidence of poverty(40%) exists in the households where the occupation of the head related to agriculture, forest, and fisheries. In the rural area using the upper poverty line, the highest incidence(56.3%) was observed in households belonging to agriculture, forest, and fisheries and the lowest incidence present in off-farm works.(BER 2003,p156). In order to assure poverty reduction and sustainable development, it is necessary to increase per capital income for poor along with employment generation to adopt programmes for saving, increase continued investment in different social sector which would increase the living standards of poor

4.3 Importance of Inland Fisheries Sector:

Open water inland fisheries is one of the most important and promising sector for economic development of Bangladesh. This sector plays a significant role in meeting the demand for protein, earning exchange and social economic development of the rural poor by alleviating poverty through employment generation.(Bangladesh economic review 2003,p68). But open water inland fisheries face specific management problems due to their common-pool resource (CPR) characteristics. The public good characteristics of the fisheries as CPR-partial rivalry/subtract ability, low exclusion, mobility and lack of storage capacity pose management problems. Due to public good characteristics of CPR neither exclusive private property rights nor state control can resolve the management problems. Fisheries is one of the most important and promising sectors having vital contribution in the economic development of Bangladesh. Inland fisheries are a major sector of the Bangladesh economy, 80 percent of the rural households about 70 million people catch fish for food or income and about 60 percent of the national animal protein comes for fish.(K. Kuperan vis Wanathan, 2005)

4.4 Background information about CBFM Project:

The community Based Fisheries Management Project (CBFM) worked in 19 water bodies is being implemented over the ten years(1996-2004) through a partnership of World Fish Center,(WFC), the department of Fisheries(DOF) of government of Bangladesh, and several Non-Government Organisations(NGOs). The CBFM project has working through by established community Based Organizations (CBOs) in each water bodies fishing sector in rural Bangladesh. The community based organization providing property right of common pool resources (CPRs) , more specific, open inland rivers or jalmohals, open beels, closed beels, for the poor fisherman who has no right in access of common property right before implementing CBFM project in rural areas.(CBFM-2, Annual Report, 2003).

There is growing empirical evidence suggest that social capital contributes significantly to sustainable

development where sustainable development has been defined as a process whereby future generations receive as much capital per capita as – more than the current generation has available. Therefore, the role of local level CBO association life that means the structure form of social capital is significantly important for sustainable development. The membership of CBO helps to build up a higher level of social capital, which has a positive impact on household's well-beings.

The goal of the CBFM project is to improve the livelihoods of Poor people dependent on inland aquatic resources which would be achieved by developing, testing and assessing arrangements for community based fishers management across the diversity of inland fisheries in Bangladesh. It is expected that community -based approach improved government-community linkages which are elements of horizontal and vertical social capital, in inland fishery system would promote sustainable, equitable and participatory management of inland open water fisheries and contribute to poverty alleviation. Three approaches to CBFM are being adopted by the NGO and CBO partners which are created the structure and cognitive form of social capital at village and households level. The three approaches are(CBFM News , August 2005):

- 1 Fishers managed fishers by own based on forming groups among the fishers using each water body and than a community or organization representing these groups and taking management decision. This approach help to build up structure form of social capital(association life) for improving poor fishers household welfare.
- 2 Community managed fishery where participatory planning with different stakeholders is follow by forming a water management community according to the suggestions of all stakeholders.
- 3 Women managed fishery-this mixes participatory planning involves the whole community, with groups formed with women, the women group takes a lead in resource management.

At the local level, communities have the capacity to manage their own aquatic common pool resources to develop efficient fishery management system by building up community-based organization (CBFM). The CBFM members work jointly, share information, and divide the management cost to every body in their community for efficient management common pool resources. As a result, aquatic biodiversity may be preserved or even enhanced, CPR base (fish) production increases, and equitable distribution of benefits may be achieved. The local government support and access to NGOs is facilitated by the CBOs activities, cluster and network, that way the community based organization members have the ability to manage the CPR s. The CBO groups and network activities improved the poor fisher's household income, the livelihoods of the surrounding communities and more important think is sustainable development. Community based fisheries organization (CBFM) has a good relation with the local self-help groups, fisheries production committees and other villages level institutions which can provide some important activities that improves the livelihoods of the surrounding communities, increases income level of households and finally tries to reduce the rural poverty

Section Five

5. Analysis of Primary data at three level- village level, organization level, households level

All the result depends on my chosen indictors of social capital. In this section, results from the interviews highlight by transfer the indicators in to tabular form. Using my three indicators (association life, trust,

collective action), Firstly part of this section consisting by the village level analysis -whether there are any difference regarding the social capital of the five villages Secondly, the organization level analysis investigate how social capital indicators creating by CBFM activities and what are the impact of social capital on households welfare in case of access to assets, access to credit , collective action with compare to non CBFM members. iii) Scrutinise the effect of social capital on households non-monetary well-beings according to access to health ,access to education iv) finally this section analysis impact of micro-credit programs on women empowerment.

5.1. Village level analysis -trust, association life, collective action:

This chapter discussed how the household's social capital varied at the village level. The result of interviews are discussed and presented here. Note that the conclusions drawn in this study are not only interviews result but also my own observation. Just some important differences between CBFM villages with non CBFM villages are discusses. This section also discusses association life and collective action indicators that will measure with the interviews from each village. This section answers how the village are different in terms of indicators.

5.1.1 Trust:

The result of interviews showed a small difference between the villages, when it was asked generally if they need to borrow money ,from whom they would take? A majority of household members borrow money from their community people. Bilashpur and Tahasa had the highest proportion of informants responding positively to this question which implies that the level of trust in Bilshpur & tasaha villages were higher than other villages. In Ramkrishnabari, showed the lowest value of social capital in respect of trust because a majority of people like to borrow money form government officers and NGO members.

However regarding with the second question of cognitive social capital of the five villages, there were no significant difference between the villages households . Most people in this community are willing to help if they need which indicates high value of cognitive social capital. Even though I notice that there were no differences between household of CBFM with non-CBFM members. This indicates that the level of trust is not depends on the CBFM or Other institution association life. Trust is primarily a horizontal issue it's not depending on association life that means CBFM activities or NGOs do not play any significant role in creating the level of trust.(see table 1)

Table1 –General form of cognitive social capital

Questions	Bilashpur*	Gobindacharan	Ramkrishnabari	Tahasa	Gonipur
Generally, do you trust different groups of people for your crisis periods? For example , If you need to borrow money from somebody, whom do you prefer ?	Yes no	yes no	yes no	yes no	yes no
a) People in community groups members			3	7	8
b) People in other community groups members	7	6	0	0	0
c) Government services/ leader/informal groups members	0 3	2	7	3	2
		3			

In general, do you agree or disagree with the following statements? A. Most people in this community are willing to help if you need it i. Agree strongly ii. Agree some what	8 2	6 4	5 5	8 2	7 3
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* calculated by the number of respondent of household member of CBFM and non CBFM members.

5.1.2 Association life

With my own observation on the formal and informal association life I mapped out the membership of groups and association of fishing groups among my informants. Distinct difference of associations' life could not be found in the villages. The purpose of this study was not to make distance between poor fisher households with richer households. However it was observed that the fisher household's who are members of CBFM or any Matsho samati were more engaged in organization life that promoted higher collective action, and trust than non members of fisher households in my selected villages.

According to answer sheet most of the household members of all five villages would deal or resolved with their problem (in case of crop diseases) individually or through close relatives which suggesting low levels of social capital. Within five villages, Gobindachara, village members are more frequent in dealing with any crisis periods than compare with Ramkrishanabari, Bilashipur. The structure form of social capital in non CBFM members villages shows lower value of social capital than member of CBFM villages. (see table2).

Table 2: Structural form of social capital

Structure form of social capital			
Characteristic	Closing School school community solve problem=2(scm) (number of households respondents)	Flood/crop diseases Village itself=1 village together=2 leader/chairman=3 (number of respondent households)	Conflict solution By mutually dialoug between conflict parties=3
Village	scm=8, other=2	vill itself=8 ,vill together=2	Mutually dialogue between parties=9, Formal meeting=1
Bilashpur	scm=8 , Local chair=2	villager itself=5, villa together=4 leader=1	MDBP=9 Informal=1
Gobindachara	scm=5, vi together=4 local chair=1	v itself=3, v together=5 leader =2	MDBP=10
Ramkrishana bari	school comm.=12	villager it self=12	conflict resolve mutually=12
Tahasa	scm=8	villagers itself=8	conflict resolve mutually=8
Gonipur	scm=8	villagers itself=8	conflict resolve mutually=8

In case of school closing problem, all of the five villages gave the identical answers in closing primary school for three months than who solve the problem community, the school community or leader of villages were solve the problems which indication low stock of social capital. But Gobindachara shows the highest value of structure social capital, some time the villager together solve the problems.

According to answer sheet about conflict resolution , a majority of the villagers mutually resolved the conflict between the parties that reflect higher level of social capital. The ramkrisanabari, Gobindachara villagers more actively mutually resolve any type of common problems than Tahasa, and Gonipur villages which indicates higher value of social capital. However, there were a significant difference regarding the structure form of social capital of the CBFM villages and non villages. In Bilasgipur, Gobindacharan, Ramkrishina bari, villages the households members were tries to resolved some common problem such as crop disease or flood or closing school that provided higher value of structure social capital than non CBFM villages.

5.1.3 Collective Actions:

Collective action is measure from the frequency of participating in villager development project or household contribution of time or money to the village development project if they are not benefit. At the village level, an index of collective action measure with the participation rate of villagers during any crisis periods such as flood or crop or fish diseases.

Table3: Village level collective action

Village	Community development project yes=1, no=0	Conflict solution(mutual dialogue between conflict parties	Contribution money or time for villagers, once time=3,)
Bilashpur	1	9	1
Gobindacharan	0	9	3
Ramkrishana bari	0	10	5
Tahasa	0	11	3
Gonipur	0	8	1

5.1.3.1 Community development project:

The Bilashpur village has implemented one project for electricity distribution among the villagers. In the remaining villages none have started up or end up any own development projects. According to the question of village development project, Bilashpur only one village of my selected five village where the villagers together doing one community development project such as electricity distributed .It was possible due to CBFM project working in that village. That's way the Bilashpur villagers get more infrastructures facility than other villages and have higher value of social capital than other villages where the villagers did not doing any community based development.

5.1.3.2 Conflict solution collectively:

The relation between villager and administrative officer are good according to the conflict resolution in all villages. One of the important indicator of social capital in a village is the amount of collective doing any types of work from here everybody get benefits. The level of social capital with in the village can be

crudely determined by the incidence of crime or violence against the poor women or men that is found in the community. In three of my village surveyed, the incidence of crime was lower in Ramkrishanabari than Gobindacharon and Bilashpur, Tahasa, and Gonipur because if they face any problem, they solved it with informal meeting and mutual dialogue between disputes parties. In Bilasgpur, the incidence of violence against women is lower than other four villages due to CBFM women membership.

5.1.3.3 Contribution of time or money for village development:

In Tahasa and Gonipur villages, the household member of informal fishing group mutually solves their through informal group meeting which indicates higher level of collective action. But in respect of village development project participation rate out put indicator of MBCA was lower in comparison with CBFM members and non CBFM members living village . At the village level, the rate of collective action depends on the villagers jointly participation frequency in community development project. But the villager's participation in village development work was very lower in my selected two villages for study. Where CBFM were not working which indicates lower value of social capital. More over, the result of collective action has been almost same for five villages. Because the villagers are almost poor, less educated, lower income level, lack of awareness about village development. The villagers are fulltime busy to improve their own livelihoods that's way they are less interest of jointly doing some things i.e. village development work from where every member of community get benefits.

Therefore, the frequency of contribution of time or money for village development by villagers if they are not directly benefited were very low in five selected villages .Most of villagers in five villages does not contribute time or money for village development project that means the frequency of collective action is lower in those five villages. Where most frequently assigned higher collective action and one or never participating assigned lower collective action.

According to answer sheet, the Ramkrishnabari villagers are participating several times in village development work such as tree plantation in public road side, road repairing in comparison with Bilashipur or Gobindacharan. The villagers many a time helped each other for example; the wealthier fisher household provided some amount of money to the poor fisher households for dowry payment in time of daughter marriage. Therefore, the indicator of social capital in Ramkrishina bari higher than other two villages. Actually the collective action does not depend on institution group life, it depend on people wiliness to work together.

In summary, in respect of cognitive social capital indicators (trust), in all villages a majority of the villagers trust each other in any kind of crisis periods. The level of trust in each village not depends on village level association life that means the CBFM or any NGO activities do not play any significant role to increase the level of trust. On the other hand the structure form of social capital depends on the association life or group formulation in a village. It seems that the fisher household's who are members of CBFM or any informal institution are more engaged in organisation life that promoted higher collective action, and trust than non members of fisher households in my selected villages. Hence the villagers who are more involved in association life have more opportunities to solve their problem, which indicates high value of social capital than lower association life in a village. At the village level, the rate of collective action

depends on the villagers jointly participation frequency in community development project. But the villagers participation in village development work are lower in my selected villages due to people are poor, less educated, and busy with their self works. Note that out of five villages, one village (Bilashpur) involved in CBFM village development electricity distribution project. This implies that CBFM activities in terms of collective action is provided below which indicates lower value of social capital in rest of non-CBFM villages.

5.2. Organisation level analysis -CBFM activities

This section illuminates how the CBFM activities influenced the social capital indicator such as, association life, level of trust, and MBCA in the villages. In this section also discussed, how the households level social capital indicators are varied in CBFM household's members with non members.

5.2.1 Trust

When comparing CBO members with non members, I still could not distinguish any clear differences regarding the level of trust. After analysis the primary institution information I found that the CBO have a secondary role in the building of trust. But the level of trust within CBFM members has higher than informal groups members, the CBFM groups seem to breed high levels of equity and group participation. The profit of CBO equally distributed to participating group members, here the base of outcome depends on group level trust, norms and expectation. In this sense, the pool of social capital is relatively rich in CBOs. The results of CBFM fishing activities have been very positive in terms of productivity, equity, and degree of collective actions.

5.2.2 Association Life:

In Bilashpur village, the CBO institution members participating the decision making process once in a months which indicates lower value of structural social capital. The organization follows a democratic pattern of decision making process and it was participatory process. The executive members of CBO were voluntarily selected by voting process which indicates higher social capital. The villagers are also voluntaries to participate in CBO programmes. The voluntary co-operation with in members play a significant role to resolve any type of social problems that means the CBO institution roles & regulation for decision making, voluntary co-operation for any activities with in groups helps to change the association life but could not show any distinct differences.

There were no distinct differences regarding the level of association life of the three observed villages when the informants were asked directly whether they voluntary participating in decision making process or frequency of CBO meeting holding. Especially, in the Gibindacharan village, the poorer fisher households were often more engaged on organizations while the richer fisher family member to a larger extent keep to themselves. In a month, there were four time CBO meeting holding and they were voluntary participation and co-operation in decision making process which indicates a higher level of social capital.

Table3-Structure form of social capital at institution level

Question	Bilashpur	Gobindacharan	Ramkrishanabari
1. How many meetings does the CBO hold for each village in a month?	4	4/ which indicate higher level of SC	2
2. What is the decision making process of CBO? Participatory Non-participatory	Participatory/voluntary selected the executive member of CBO	Participatory/voluntary selected the executive member of CBO	Participatory/voluntary selected the executive member of CBO
3. Is the villager's participation in the CBO programmes voluntary?	voluntary participating	voluntary participating	voluntary participating
4. And its involvement encouraged voluntary co-operations	voluntary co-operation to resolve any types of social problems but not fully voluntary.	voluntary co-operation to resolve any types of social problems	voluntary co-operation to resolve any types of social problems

Association life with CBFM

During the reporting period the weekly and monthly group meetings were held in the three selected villages in the Hamil beel area. In my field study time, I was observed that all the group member in each villages not significantly actively or regularly participated in the meeting, discussed, and shared their problems, saving, income generating activities, but the executive member of CBOs were actively participation in monthly or weekly decision making process . Therefore, the income levels of active member of CBOs were higher than the household members who are not regularly participate in decision making process. According to index of structure social capital, we assume, whether organisation of a village lend to function more democratically have yield higher structure social capital than organization of the poor function. At the community level, organizations that follow a democratic pattern of decision-making are generally believed to more effective than others(see table 3)

Besides own observations of the informal and formal association I mapped out the membership of groups and associations among my informants. Distinct difference of association life who were member of CBO in the water body could not found in the three villages. But there was a significant difference between association life who were only CBO members with who were also other regional NGOs members at a same time. The fisher households who were at the same time member of CBO and other NGOs have a

more opportunity to change their association life and also well-beings. They have more possibility to get more information about market, access to education, health, social safety net etc and have more possibility to exchange information to each other that reduce the transition cost, increase output

Association life of without CBFM:

In my field study of villages in Tahasa and Gonipur , most of my respondent household are involvement in catching and selling fish that business in fishing. I observed that the households members are involvement of fishing samati and at the same time member of regional NGO has been better off in respect of household income, saving, access to helth and education. On the other hand, the household who are not member of fishing samati (production groups) or ant other regional NGO has been worse position than member households in respect of social and economical condition. In Tahasa, the household who are member of NGO and production group(Fishing samati) at the same time have more households income and well-being than non member of fishing household because the member household have more opportunities to share and exchange information each other that reduces the transition cost, increase their income. In case of Gonipur village, most of household head are member of regional NGO and half of them are also member of production groups like fishing samati . The household member has a association life with in community based informal fishing groups has been higher income and other non monetary well-being such as access to health and access to education for child's.(see appendix-4)

When we compare the result of association life between fishers households who are member of community based organization (in Hamel Bell area) with the fishers household who are not member of CBO than we find a significant different result.

The main finding of association life is as follows:

- 1 Households member who are regularly participating in decision making process or attendance in any formal or informal meeting for increasing fish production have higher income than households member of CBO who are not regularly participating in group meeting in case of my selected three villages.
- 2 The fisher household's who are member of fishing samati(union) and regularly participating in groups meeting have more possibility to increase their household income than the households who have no membership in any fishing groups or samati (union) which was true for Tahasa and Gonipur village households.
- 3 The households who have two or three membership at the same time that means who are member of CBO and other regional NGO have more monthly income than the households who are only member of CBO.
- 4 The group members who are regularly doing their saving in CBO have more physical and human capital than the household who are not regularly in saving. On the other hand, comparing the association life of CBO with other association life of informal fishing samati (union),I found that informal fishing samati members have more saving, more physical and human capital than formal CBO members. Because they are saving at higher rate & getting more information than CBO members.
- 5 But the association life of CBO improved the households well-being more significantly than non- members . Because they CBO members get more training for human and social development but the non CBO members

have fewer opportunities to get income generating activities improvement training.

Therefore, according to the measurement indicators of association life, I observed the index of structural social capital by CBO are higher in my selected three villages than the informal association life by fishing samati at my other two selected villages. The CBO groups membership help to built up structure and cognitive form of social capital. The CBO household's members have equal right to participat in decision making process or they are actively participating in saving programmes which indicates higher level of structural social capital in the selected three villages. On the other hand, the existing organization (both CBO and Mosho samati) in fishing sector association life are internally homogeneous association according to kinship, religious, gender, age, occupation and income level. Most of the members are male, age varied between 20-35 years, Muslim, occupation are fishing(catching &selling fish from common Bell), illiterate and the level of income between 2000-2500 take per months for all members. Hence, it easier for members to trust each other to share information, and to reach any decision which easier to bring about collective action which yield higher level of benefits than diverse association. In this way the homogeneous association life help to build up cognitive form of social capital at the households and village level.

In conclude, the Household who are member's of CBFM and at the same time member of NGO are likely to have more social capital than non members. Because, the member of CBFM or any NGO households are more actively and frequently participating in group meeting, which lower their transition cost for fish production, increase opportunities of share information, that's finally increasing households monthly income and welfare. Therefor the members of CBFM have more income to improve their livelihood , education and health than non-members .

5.2.3 Collective Action

At the local level institution the community Based Organization (CBOs) play an important role for conflict resolution between the groups members, institution members with informal members, local people/leader with CBO members. Under the CBFM project the developing approach to manage conflicts between resource users who have acquired exclusion rights to resource through the co management process and those who are excluded. But the conflict resolution depends on nature of group's formulation, process of the different user groups and user's role and regulation. If the group members face any problem than they can solve mutually diagonals between the parts which indicated a higher value of social capital with in the community. In respect of conflict resolution question most of my respondent's answer identical that they were mutually solving their conflicts.

In conclusion, the CBFM activities promoting my selected three indicators of social capital. The group formulation with poor fisher household's member and the level of trust with in group produce the output indicators of collective action. The active participation in collective action by groups members increase the poor fisher man households income by jointly increasing fish culture in their control water bodies. From my field study information the non-CBFM fisher household's member position in respect of per capital income, and other non monitory well-being, have poor than CBFM member. Because they have limited opportunities to get credit which improve their physical assets, saving , human capital. Therefore, at Tahasa and Gonipur village members have lower value of social capital indicators which limiting their ability of access to credit , access to assets, and collective actions.

Therefore, it seems that household members active participation in CBFM activities are increases the MBCA which indicates higher value of social capital. Hence, the active participation in collective action by groups members increase the poor fisher household's income. So the CBFM household's members have more social capital, more opportunities to improve households income than non CBFM members.

5.3 Households analysis- The impact of Social capital on household's welfare

This section estimates the impact of social capital indicators on household members at household level instead of a community or organizational level. First this section described the effect of social capital on households which estimated the accumulation of assets, access to credit and collective action.

Secondly this section presented the effect of social capital on households non-monetary welfare. The result based on households survey result in selected five villages .

5.3.1 The Effects of social capital: Asset Accumulation, Access to Credit, Collective action

5.3.1.1 Asset Accumulation:

To investigate whether social capital is effective in contributing asset accumulation, we assume that number of membership in different diversify or homogeneous association life in each household have higher asset ownerships than the household members who are member of homogenous association . The active participation in groups meeting is linked with higher asset ownership. In a relatively rural poor setting, most of the households interested in acquiring social capital by investing time and money in local association like CBO or Motsho samati, due to avoid risk of income fluctuations. This association involvement accumulating more assets which can be sold or borrow in time of need or arranging access to credit. The local association life for fishing increases household current income, which increases physical asset for households. Out of my total 45 household, half of them beneficiaries' members owned durable goods such as, land, van, radio etc. Therefore, improving access to credit and saving is a major reason why my selected fisher household join local associations. One-fifth of total members primarily joining local association only for saving. Here the asset accumulation depends on the ability of poor fisher household saving and actively participation.

5.3.1.2 Access to Credit:

The CBFM project and Masho Samati membership's objectives are not only finance but also to contribute access to credit. This is the sense in which social capital is truly "social" in that the building of networks and trust among members in the context of a social setting. It spills over into financial associations for access to credit i.e. member of households are actively participating in decision making process and who have more opportunity on access to credit, access to assets, and collective action.

The CBFM micro-credit programs support the poor fisher beneficiaries households for income generating activities(IGA). It reduces poor fisher's dependency on money leaders and compensate loss of income during any closed period for fishing. To uplift socio-economic conditions, create employment opportunist and increase family income, credit support is important to the beneficiaries. The nature of IGA's were related with fish business, rickshaw purchase, cow fattening, carpentry, rice husking, fingerling purchase etc. Therefore, the micro-credit programs improved the poor fisher household opportunities to access

credit .Its finally increasing their per capital income.

5.3.1.3 Collective action:

The role of collective action in a rural setting for common pool resources(CPR), need to be managed by a community is more important. In my selected villages there is a lack of jointly doing some work to manage the CPRs, due to few number of local association were set up to manage the CPR s at sustainable level. The CBOs member of households undertaken some collective action for increasing fish production for their own purposes but the CBO member of households normally not interest to collectively doing some village development activities.

According to my households survey data about collective action, the number of times or frequency per year households participation in collective action against the social capital variable, I found that households who are member of more association were more likely to participate in collective action. In my observation only 5% households were collectively doing village development work such as tree plantation. The frequencies of doing collective actions also lower in the five villages where most of household members are busy with their own productive activities. Here, the collective action depends on nature of social networks that means the memberships of homogeneous institution . In case of CBFM villages the highest participation in collective action comes from membership than non members village households. The household's of CBO member are collectively cultural fish, catching and selling fish and increasing income. This implies higher value of social capital. In Bilashpur, Gobondacharan, and the Ramkrishana bari village member participation in collective action more frequently than Tahasa and Gonipur.

According to my household's survey data, I found positive impact of social capital on household's welfare. In this section I qualitatively measured the impact of social capital on household's welfare. The focuses were on household membership's in local level association, like CBFM as bearing of social capital indicator which increases their welfare and consumption day by day. The main finding was a positive relation between households welfare and social capital, where households with high social capital have higher per capital expenditure or income, more physical assets, higher saving and better access to credit.

5.3.2The effect of social capital on household's non -monetary welfare:

This section mainly discusses about the impact of social capital indicators on poor fisher households non-monetary welfare that include education and health situation of household.

5.3.2.1Access to human capital:

The social capital indicator depends on the level of education of the head of the households. It was assumed that heads with higher level of education(secondary and above level) would have more social capital because, of their wider exposure, greater access to information and better skills of networking than heads who have no formal education. The level of education of the head of household significantly influence on social capital index whether structural or cognitive. At Bilaghpur village, only 10 percent households head have completed secondary school and 20 percent completed primary school, rest of people are only can do signature their name. In Ramkrishna bari, 20 percent of the head of household complete secondary school , on the other hand 60 percent people illiterate .There were total four number

of primary and secondary school. Therefore, the household of Bilashpur village have more participation in institution decision making process and get more micro-credit than gobindacharan which more improve households income and well-being. In Ttasha and Gonipur villages more of the head of the households are illiterate and have less access in institution decision making process and access to credit and also collective action. There were only 2 number of school in each villages. Therefore, the level of social capital in the above two villages are lower than first three villages(see table in appendix-3).

To increase the technical knowledge, skills, and for attitudinal channels of the staff and beneficiaries, training is one important tool. CARITAS has organized and will organized a series of different categories of training under the project for its staff and beneficiary. Different kinds of awareness as well as skill development training were provided to the community people by some CBFM training programmes. The training are such as –basis awareness training, leadership and management, account keeping, beel management training, gender & development, community health & sanitation, justice & human right, plant nursery, bamboo craft, poultry & livestock, fish culture & management, folk training. The above training was arranged at field level as well as region level. In some instances, more than three and four water body group members participated in the same training and venue. (Bangladesh economic review 2003).

In conclude, human capital development has a strong effect on poverty reduction. By improving standard of living, and economic growth the CBOs emphasis some training programmes on enhancing the basic capacity of the rural poor fishing households by way of strengthening the health, education and nutrition programmes. The CBFM-2 project partner of regional NGO such as CARITAS(working at Hamil Beel, Madhupur Uupazila, in Tangail district) informal human development training programmes, more specific the education programmes, health & services programmes which creates the tools for human capital. Its increases human capital stock of the CBFM members that also increased active participation in groups decision making process. Therefore, CBFM human training programmes play an important role in fostering social capital . The number of households children going to school increased due to high yield of members human capital that increased households per capital income.(see table in appendix 5)

5.3.2.2 Access to health:

At the household level, the CBFM activities improve the household health situation. After implementing CBFM project, the health awareness' training programmes and initial financial support improve households access to health services. In respect of my survey, a majority of households members have a tubewell , toilet , visit doctor if they are ill. Now the poor fisher man health services improved because they got health training programmes by CBFM .The CBFM activities increases households income due to active participation in group meeting which helped them to improve their health situation than before.

5.4. The impact of micro-credit program on women empowerment

Under the CBFM project, the partner NGO provided micro-credit programmes for women. It help to increase women households member's access to micro-finance. Which generates new income earning opportunities for women to enhance social mobilization ,create formal networks, norms & trust for collective action and thus develop social capital. The micro-credit activities increase women's economic opportunities, security and empowerment. It also helps them to reduce poverty and change in the

traditional rural social structure (World Bank. Engendering Development, 2001). My research findings suggest that micro credit and its supportive programs have led to a remarkable enhancement in social network formation that improved women's status in family and in community. It increased mobility, to some extent greater self confidence and feelings of identity for the women.

At Bilashpur villages all of my respondents were women household members of CBFM. The micro-credit program for women improved their socio-economic condition. After implementing the CBO micro-credit programmes, the women's participation in groups and family decision making process increased. Now women are more actively participating in groups' decisions which indicated a higher value of structure social capital. The active participation in group formulation increased women's empowerment which also increased their self-confidence and self-esteem & finally their empowerment in CBFM reduced women's vulnerability to social and economic violence. The CBFM roles, regulation, and actions help women to improve the following positions:

- Women empowerment through micro-credit programmes improves their economic situation. Now women of poor households have opportunities to involve them in income generating activities outside the household's work.
- Institution roles, regulation and action close gender gap. The efforts of CBOs have also positively increased poor women's awareness about social and legal rights.
- Reduce violence against women –the incidence of violence against women is much lower than before CBO involvement in IGA for women.
- Increase employment and economic opportunities-access to education and common pool resource(CPR) management system through CBOs group membership. That increased the physical mobility, and income.
- Women empowerment increased participation in decision making in case of family planning, child education & marriage, buying and selling property.

Therefore, in case of Bilashpur village women's membership in groups run by CBOs improved their socio-economic condition than with Gobindacharan and Ramkrinabari. In Bilashpur village, the CBO group networks' activities, specially micro-credit programmes ensure greater participation of women in all spheres of development within the framework of poverty reduction strategy.

In conclusion, at the household level analysis I found a positive impact of social capital on households' well-being. The CBFM poor fisher household members have more income than non-members which increases their access to assets, access to credit and collective action. It seems that active participation in group meetings, regular saving helped them to improve their income position than non-members. The collective actions within the group help them to share information, lower transaction costs which increased fish production and income. Due to CBFM activities in rural areas, the poor fisher household's monthly income increased than before CBFM. For this reason, their well-being increased. On the other hand, the CBFM awareness building training programs for health and education helped them to improve their non-monetary welfare. The micro credit programs of CBFM improved women's empowerment. Now women have little money to invest in IGA.

section 6: Secondary analysis of CBFM Activities

8.1 The Role of CBFM project in Creating Social Capital

In the last over decade, several regional & local NGOs and state initiative have come out with reforms creating new set of institutions which cater to the needs of the poorest and marginalized by making them a part in the institution and ensuring them fishing rights in Bangladesh. The CBFM build up some Community Based organization (CBO) to implement their goal. The CBO's is one kind of 'new institution' which work at the local level for rural poor fishers man who are mostly depend on common-pool resources for their livelihood. It is play an overwhelmingly important role for economic development and poverty alleviation. Moreover, the some functions of the CBO are to creat social capital indicators such as networking, trust, and mutually beneficial collective actions with in a community which improve livelihoods of the poor people. Therefore, CBO activities in inland fishing sector generate different form of social capital such as trust and norms of reciprocity (cognitive form of social capital), horizontal networks and institutions (structure form of social capital) to promote mutually beneficial collective action(MBCA) (CBFM-2 –Annual Report September 2001-December 2002).

At the village level, the CBOs participating of poorer community, are considered as bonding, linking social capital, and playing important catalytic role in enhancing mutually beneficial action. By similarity, bridging social capital is crucial to the success of civil society as like CBOs for rural development because it provides opportunities for participation, increased networks for exchange, and channels to voice concern on behalf of those who may be locked out more formal avenues to affect change. The role of CBOs to creating bridging social capital at rural level community is more crucial for CPRs management because it reduce the information gap between members of groups or community, increase service delivery and implementation, and reinforcing trust and norms with in society. Therefore, the CBOs and youth groups, krishi somatic are expected to play important role in disseminating information, reducing opportunistic behaviour of members and facilitating collective decision making.

Under certain condition namely trusts, mutual respect, believe and obligation which are important for any society to solve its resource allocation problem. The CBO households member have low transaction cost for fishing business in village endowed due to trust among members, and the ability of people to cooperate (Krishina, A. and Uphoff, N.1999). The CBO association life helps to build up cognitive form of social capital. To achieve the sustainability of the fishing resources, the CBO introduced micro credit for fisher's wife as a part of the Alternative Income Generation Activities (AIGA) of CBFM-2. The income from AIGA significantly improves their lives and increase affords to send their children to schools. In this way social interaction becomes stable and acquires status of capital where trust is an important component of this process. (CBFM Annual Report 2003, WFC ,Dhaka, Bangladesh).

Collective action is another important aspect of community life for resolving common pool resource management conflict or equal distribution property right. The indicators of structural and cognitive social capital can be help up here. Traditionally, CPRs are managed by users in a community according to local customs and traditions, the local level new institution such as CBFM given the physical capacities of the CPR management. The CBOs household's member collectively fishing and manage their water body. Here the members are collectively fishing, catching, monitoring water bodies that increase fish production

and improve household's income level and other welfare

Section seven

This section mainly discusses about the main finding of survey data. It base on the analysis result of primary and secondary data.

The contribution of social capital on poor fisher household beneficiaries by CBFM activities was significant in my selected three villages where the CBFM working for the poor fisher man. The household level of social capital has a strong affect on household welfare, especially, improve their per capital income. Here the effects of social capital operate through at least three mechanism: collectively doing fishing activities for the Beel, sharing of information among association members which reduce opportunities behaviour and improved collective decision making.

In my selected three villages by CBFM working, the magnitude of the social capital effect on household well-beings were higher than non CBFM member. The positive impact of the social capital on households members of Biashipur and Ramkrishabari more than the Tahasa or Gonipur village households member . Because the value of the indicators of social capital in CBFM villagers were higher than other two villages. The members of CBFM more actively participating in group meeting, trust each other for sharing profit and collectively fishing that's way they have more opportunities to increase their income for improving welfare than non members.

The households level social capital have several long term benefits effect on household well-beings such as better access to credit, better ability to smoothen out income and accumulating assets. Members in local associations whose primary role is financial (e.g rotating credit and savings) associations has a strong positive effect on household income. The effect on social capital on household welfare depends on the type of household association life. Membership in production group(fishing community or beel samati) and social associations(CBFM) have the largest impact on households, specially improve household income . The social capital indicators has a strong effect on households non-monetary well-beings. The CBFM human and social training programs help them to increase their awareness about health and child education. After implementing the CBFM project the income of poor fisher increases which improved their livelihood situation. On the other hand the micro-credit programs of CBFM project improved the women empowerment position in rural areas. The micro-credit programs increased the women alternative income generating activities which increase their income and socio-economic conditions.

However, household's active participation in decision making process of informal groups, the benefits to the household rise are significant. At Tahasa village the active participation in local level Matsho somati have increased the household's welfare. The impact of social capital on poverty alleviation also significant, the local level institution improving the household income which reduces the incidence of poverty in our rural areas.

Section eight

8. Summary and conclusion:

This chapter contains a summary with conclusions drawn from my study. Its sum up with a few suggestions

After analysis both primary and secondary data on poor fisher households well-being by CBFM activities , I have reached the conclusion that CBFM plays a significant role in the building of social capital. The institutional building of social capital indicators such as, groups membership, trust, mutually collective action has a significant affect on poor fisher households well beings and income.

The CBFM project working to build up some community based organization (CBOs) at the community level. The new institution CBOs are more likely to succeed in creation of social capital indicators in comparison to other government or economic institutions. The CBOs particularly play a role in building structural social capital by formulation group with fisher households. In a short time the creation of cognitive social capital by CBOs activity more limited, but its work in the long run promotes cognitive social capital. The both form of social capital has a strong effect on fisher households to improve their association life ,trust, and collective action. to

A major problem in rural Bangladesh is, majority of people is less educated, lack of access to assets, access to credit, and collective action. But the CBFM activities as a positive impact on poor fisher households members. The association life of CBFM increases the income opportunities for poor fisher by reducing transition cost and sharing information .The level of trust within group member increases the collective action and the collective action increased the income. Therefore, the positive impact of social capital on CBFM households has higher than non-member of CBFM in terms of income, health and education.

The micro-credit programmes of CBFM for group members improve the fisher households assets, credit, and finally collective action. The micro-credit programmes for group members increased the households non-farm activities which improved their monthly income and saving. The most significant impact of micro-credit programmes is women empowerment. It increases the women involvement in non farm activities that increased their family income and socio-economic condition.

Another positive outcome of CBFM works is the ability to solve the common pool resource allocation problem. The CBO's group members are more collectively managing their common resources (water body) for producing fish than non -member. Therefore, in terms of social capital indicators, and level of income the CBO members are better off than non- members.

Conclusions of the analysis of my secondary data indicated that CBFM's programme promote social capital and thereby affect all three indicators, trust, association life, and mutually beneficial collective action. However, after investigating of my primary data I found that CBOs did not have direct affect on trust where the level of trust does not depend on CBFM activities. The CBFM project programmes primary help to build up structural form of social capital and output indicator of collective action. But out of CBFM, the social capital indicator has a lower value in my selected five villages. However, the effect of social capital

by CBFM on household members has been more strong than non members. Its improved households per capital income by increasing fish production with in a group which has a spill-over effect on households well-beings. At the household level, the social capital has a positive impact on access to assts, access to credit and collective action and also has a strong effect on household non-monetary well-beings. The micro-credit programmes increased women empowerment and socio-economic condition. Moreover, we suggest that there is a need for both formal and informal types of local level organization, government institution to promote social capital and reduction poverty by improving household welfare. In summary, I conclude that the local level institution, like CBFM play a significant role for creating social capital indicator. The impact of social capital on household members is positive. The association life, level of trust with in-group and collective action increases the poor fisher household income, health, and education. Moreover, the micro-credit programs improved the women position in their family and whole society.

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Appendix

Appendix-1 Community Characteristic: Population dynamics, physical capital

Village	Population	Electricity	% of households used electricity	Types of road	distance from main road	distance from market
Bilashpu	2500	Fully electrified	60	Fully paved/good quality	1.5km	½ 1km
Gobindacharan	2200	Partly electricity	40	paved and mud/medium quality	1km	2km
Ramkrishana bari	2000	Fully electricity	50	all weather well/good quality	1/2km	½ own village
Tahasa	2000	partly electrified	20	Partly paved	1/2km	Less than 1 km
Gonipur	1500	Partly electrified	15	paved & haring bone	1 km	More than 1km

Appendix-2 The village level social capital: Human capital and association life

Characteristics	Bilashpur	Gobindacharan	Ramkrishana	Tahasa	Gonipur
Illiterate(%of total population/Signature)	70	40	60	80	90
Primary schooling	20	50	25	10	5
Secondary and above	10	10	15	10	5
Number of school(primary, private, NGOs school)	4	3	4	3	2

Appendix 3

Association life in CBFM:

Question	Bilashpur	Gobindacharan	Ramkrishanabari
i)Do you belong to any of the groups or association that get together regularly to carry out an active or talk? Such as: a. NGO member (BRDP, ASA, GB, SUSS, CARITAS) b. Member of farmers' cooperative c. Member of cooperative society(vumihin samati) d. Member of Union Council e. Production groups,/ without CBO any fishing group(Fishing somatic) f. Social groups (youth group) etc.	yes=10 CBO/production=8 CBO and other NGO member=2	yes=10 CBO=4 CBO &other NGO(GB, BRAC, CARITAS) & school and religious community =6	yes=10 CBO=8 CBO & NGO & school community=2

Appendix-4

Table: Association life of without CBFM

Questions	Tahassa	Gonipur
. i) Do you belong to any of the groups or association that get together regularly to carry out an active or talk? Such as:	yes	yes=
a. NGO member (BRDP, ASA, GB, SUSS, CARITAS)	10	8
b. Member of farmers' cooperative		
c. Member of cooperative society(vumihin samati)		
d. Member of Union Council		
e. Production groups,/ without CBO any fishing group(Fishing somatic)		
f. Social groups (youth group) etc.	8	2

Appendix 5: Human development

Village	Bilashpur	Gobindacharan	Ramkrishanabari
Did the CBO arrange any types of training for human development? Yes/No Number of training.....	<input type="checkbox"/> Adult literature training <input type="checkbox"/> Child and health awareness programs <input type="checkbox"/> Live stock & bamboo handicraft training	<input type="checkbox"/> Child health care programs <input type="checkbox"/> vaccination <input type="checkbox"/> Social awareness	<input type="checkbox"/> Fish culture training <input type="checkbox"/> Bamboo making handicraft <input type="checkbox"/> Adult literature training <input type="checkbox"/> Off farm training/electricity