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Social Capital and Joint Forest Management Programme:

A Comparative Study on Female and Joint Forest Protection Committees in West Bengal¹

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Under a framework for the measurement of social capital at the local decentralized institutions related to three sample female forest protection committees (FPCs) and three joint FPCs, where most of the members live below poverty line and are dependent on food-livelihood security from forest resources, in Bankura district of West Bengal, this paper examines whether social capital is important for the successful development outcomes in female FPCs compared with joint FPCs where women's involvement is insignificant. This study suggests that the level of social capital is higher for all female FPCs because there already exists the tradition of community solidarity and more developed network of relationships based on cultural norms, absence or poor presence of traditional ascriptive hierarchies, endemic factionalism and common identity that contribute in building an inner dynamic of the development of social capital.

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Current thinking in social capital is still fragmented, with only common point being that social capital is the existing stock of social relationships in a society (Piazza-Georgi, 2002:461). Regarding the management of localized natural resources in the context of developing economies in recent years, it is argued that local level institutions have been more successful than others in managing localized natural resources because of existence of higher level of social capital in the society (Mukherjee, 2002; D'Silva and Pai, 2003; Chopra, 2002; Jayal, 2001). Social capital is the network that helps create linkages that in turn forge rules, conventions and norms governing the development process at different levels in all societies. It is the network of relationships between the agents within an economy. The greater the stock of social capital, the more developed is the network (Barr, 2000: 539)². By facilitating coordinated actions, the features of social organization like trust, norms and networks can improve the efficiency of society by making institutions more democratic and efficient (Putnam et al, 1993; Woolcock, 1998)³. The distinguishing feature of social capital as an input into development is that it ensures qualitative changes in procedures governing the development process to ensure its embeddedness and linkage with development at higher levels (John and Chathukulam, 2002; Meyer, 2001). Empirical evidences are indicative of the fact that social capital formation at the local decentralized level is crucial for natural resource management/protection and social capital is best conceptualized as an input into the process by which institutions for development are created. (Chopra, 2002: 2911). An evolving and increasing stock of social capital is a necessary input into a sustained process of development. Social capital constitutes an input into development that needs to be accumulated and strengthened over time. Natural resource linked programmes have better employment and sustainable income prospects than direct poverty alleviation programmes such as IRDP and JRY (Chopra, 2002: 2914)⁴.

Local decentralized natural resource management programmes are often rooted in livelihoods and intended to strengthen the livelihood base to provide for improved level of well-being and enable people realize their expectations with respect to the quality of life to make development more comprehensive and more sustainable. The higher is the possibility of sustaining development institutions, when there is active involvement from local communities for organizing themselves based on their knowledge and experience in planning and implementation of their natural resource management programmes (Mukherjee, 2002: 2994).

This paper attempts to measure social capital under a qualitative framework in the context of localized decentralized management⁵ of forest resources⁶ in a comparative perspective between three-sample female FPCs and three joint FPCs related to Joint Forest Management Programme (JFMP) under Bankura district of West Bengal. The qualitative scores are then quantified to arrive at aggregate scores on social capital for each FPC. This study is important in that although there are a number of studies which measure social capital in the context of localized natural resources, there is hardly any attempt to study social capital in the comparative framework (between female FPCs and joint FPCs) that seeks to examine whether female FPCs have been more successful than joint FPCs in managing JFMP and have ensured better development strategies and benefits to the rural communities.

Policymakers and advocates of JFMP agree that women's involvement in JFMP will assist the solution of environmental problems⁷, improve the efficiency of environmental projects⁸ and act as the most appropriate participant in environmental conservation as the main victims of environmental degradation (Shah and Shah, 1995). But the actual functioning of women in joint FPCs restricts them to the role of passive receiver

of information, passive role of committee formation, micro planning, site selection, protection, benefit-sharing, etc. Women are commonly excluded or unable to participate in community institutions for JFMP. Even there are instances that women resigned from executive body of village forest protection committees as their husbands did not approve of their taking part in public activities and beat them up whenever they came to attend meetings of the executive committee (Kameswari, 2002: 799). As the formal provisions for women's participation in JFMP within the various policy statements of the Indian government, rhetoric about women's role in JFMP is minimally present (Locke, 1999: 239). Even the 1990 circular makes no mention of women specifically and refers only to beneficiaries (MoEF, 1990).

Although JFMP is currently being tried in 16 Indian States, the progress report of JFMP in India suggests that the forest management group in Andhra Pradesh successfully involved women (World Bank, 2000; Agarwal, 1997). West Bengal has also made some active initiatives in this regard by establishing a new management system of female FPCs. To this end, 17 female FPCs have been established only in Bankura district and those female FPCs have been extended to all the forest divisions of the district (Sarker and Das, 2002). This paper attempts to make a comparative study for the measurement of social capital under a qualitative framework in the context of three sample female FPCs (Brindabanpur, Aguya and Malibona) and three joint FPCs (Katul-2, Balboni and Baragari) under three forest divisions in Bankura district, West Bengal.

A Framework for Measuring Social Capital

In our study we have considered *three generic criteria – productivity, equity and sustainability* – for the measurement of social capital in the context of evaluation of JFMP

in a comparative framework between two types of FPCs – sample female FPCs and joint FPCs. We have used 38 indicators to measure social capital based on three generic criteria, the number of indicators for productivity, equity and sustainability being 16, 7, and 15 respectively. Earlier, Mukherjee (2002) used 15 indicators in order to measure social capital in the context of four FPCs of the JFMP under three generic criteria – productivity, equity and sustainability with 5, 4 and 6 indicators respectively. She assigned equal weights to all the indicators for the sake of simplicity, though in practice the weights tend to differ across criteria. D’Silva and Pai (2003) used 10 indicators to measure social capital without any categorization in the context of JFMP in two villages and Watershed Development Programme in one village. Mainly, we have followed the indicators under three generic criteria of Mukherjee (2002) and imparted equal weights to all the indicators but the distribution of indicators have been increased to make those indicators simple and conceivable to the respondents.

The main criteria related to **productivity** in the measurement of social capital in this exercise includes: a) Social structure; b) Leadership; c) Group membership and sense of responsibility; d) Group capacity and level of confidence; e) External linkage; f) Status of financial capital base; and g) Technologies and improvement. Two important indicators related to ‘social structure’⁹ are: 1) Social cohesion – presence or absence of hierarchy: if it is present, how rigid or flexible it is; and 2) Endemic factionalism – factionalism among a particular class/group of people: the less the factionalism exists among a particular class/group of people, the greater the social capital is built. Four indicators of ‘leadership’ are: 1) Selection of leader – the more the consensus or democratic functioning among the people for selecting leader, the higher is the scope of building social capital; 2) Sense of responsibilities to execute public work – higher sense of responsibility by the leader to

perform public work is favorable for building social capital and ensure collective actions;

3) Local network of political leaders and forest officials – higher network influences higher facilitative role in establishing and supporting FPCs; and 4) Leader’s presence and accountability in the group meeting – frequent group meeting between leader and general members and his responsibility to fulfill obligation of group activities facilitate higher coordination and trust among them. The indicators related to ‘group membership and sense of responsibility’ include: 1) Sense of responsibility and role of members to group work – higher responsibilities and active role of members are favorable for building social capital; and 2) Active role of women – active role of women in joint FPC/female FPC is an indicative of building efficiency in environmental projects. The indicators tied to ‘group capacity and level of confidence’ are: 1) Literacy level among members¹⁰ – education has been described as an important means of building social capital in a society as it provides socialization and creates common values and ideas (Fukuyama, 2001, cited in D’Silva and Pai, 2003: 1410); 2) Traditional and cultural norms – there are instances that higher traditional and cultural norms rather than education remain the main source of social capital¹¹; 3) Trust within community – higher level of trust or lower level of conflict within community is an indicative of higher level of social capital; and 4) Accountability and transparency of institutions – democratic and transparent method of functioning the accounts of committee register, passbook etc. are favorable for building higher level of confidence and trust among the group. The indicators for ‘external linkage’ include: 1) Active supporting role of officials – active supporting role by forest officials and other public officials along with local panchayet bodies in building action plan for JFMP, financial grant for action plan, raising awareness and social motivation, etc. are the necessary inputs into the process of building social capital. 2) Group-based micro credit

programme – high activity of micro-credit programmes among the FPC members is an indicative of higher process of development network among the group members. As an indicator of ‘productivity’ the ‘status of financial capital base’ is used to signify that higher financial capital base for FPC ensures higher execution of group action plan and coordinated actions. ‘Technologies and improvement’ under ‘productivity’ help to create higher growth of trees (both timber and non-timber) including HYV seeds for the species, advanced technology for new plantation, regular water-supply facilities, etc. influencing coordinated actions among the group.

The criteria related to **equity** for measuring social capital of institutions include: a) Broad-based understanding of group activities; b) Group participation in decision-making; c) Equity in benefit flows; and d) Livelihood impacts and reduction in vulnerabilities. The indicators of ‘broad-based understanding of group activities’ include: 1) Active participation of poor and marginalized members in group activities - larger participation of poor and marginalized people in group activities reduces traditional hierarchies, casteism, factionalism, division between the rich and the poor influencing to ensure development at higher levels; 2) Collective action within group – the more the group members participate jointly in implementing united efforts within the group, the greater is the network of relationships within the group; 3) Keeping long-term interest of the institution – willingness to sacrifice personal gain for the greater economic benefit; and 4) Discussing the importance of group activities – discussion of the importance of group activities among the members is favorable for building better understanding and cooperation within the group facilitating coordinated actions. As an indicator of ‘equity’ ‘group participation in decision-making’ is based on the issue of active participation of all members in decision-making. If almost all members participate in decision-making, it creates more

developed network of relationships among members by making institutions more democratic and efficient. 'Equity in benefit flows' as an indicator of 'equity' is used to signify higher proportion of benefit to the poor and marginalized categories or below poverty line category. Higher proportion of benefit to the poor and marginalized categories is expected to ensure development at higher level. The indicator entitled 'livelihood impact and reduction in vulnerabilities' considered for reflecting 'equity' in the measurement of social capital is used to ensure food-livelihood security to group members for below poverty line category in particular during the whole year and food-livelihood security to the members during lean season of the agricultural crops and/or during emergency period. It is said that local level decentralized natural resource management programme is often rooted in livelihood and intended to strengthen the livelihood base to provide for improved level of living to make the development more comprehensive.

The criteria related to **sustainability** as a measure of social capital are: a) Group-based natural resource regeneration/conservation; b) Internal norms, mutual trust and role of clarity; c) Group attachment; d) Ability to raise issue and resolve conflict; and e) Maintenance of assets. The indicators related to 'group-based natural resource regeneration/conservation' include: 1) Collective action in conserving resources; and 2) Collective action in regeneration of resources. The indicators connected with 'internal norms, mutual trust and role of clarity' are: 1) Mutual trust in recommendation of action plan of the committee by the forest officials; 2) Mutual trust in implementation of action plan of the committee by the forest officials; and 3) Democratic functioning of the action plan. If the democratic action plans of the FPCs are recommended and implemented by the forest official to a greater extent relating to JFMP, members of FPCs deserve high incentive to execute the plan as the plan of their own. The indicators of 'group attachment'

are: 1) Rigidity of functioning FPC (higher flexibility of functioning of FPC by the forest officials may hamper sustainable JFMP); 2) Share of periodical benefit (as per commitment) of timber products; 3) Share of members from non-timber forest products (NTFPs); and 4) Period of collection of NTFPs. If the members receive 100 per cent share of NTFPs and free to collect fuelwood, leaves, fruits and other NTFPs throughout the year, higher is the possibility by the members of forest communities to save the timber products influencing effective conservation and rapid regeneration of forest resources. The indicators relating to ‘ability to raise issue and resolve conflict’ include: 1) Ability to raise issue in meeting by any member; and 2) Ability of the group to resolve conflict. The indicators for ‘maintenance of assets’ as a measurement of ‘sustainability’ relate to: 1) Maintenance of assets created (like fencing wall, planted species, timber); 2) Attempt at soil conservation and protecting soil erosion; 3) Training to the members by officials for maintenance of assets; and 4) Plantation. If there is acute shortage of water for plantation or/and lack of initiative for plantation or/and lack of funds for plantation, it may create adverse impact on the sustainability of forest resources and of JFMP.

Survey Design and Findings

The data needed for the study of social capital of FPCs under JFMP have been collected through an intensive field enquiry covering all members from three sample female FPCs and three joint FPCs under Bankura district of West Bengal. We have taken all samples from all forest divisions – Panchayet (SC), Bankura (North) and Bankura (South) – under Bankura district, because all female FPCs exist in this district only. For the selection of female FPCs, random sampling technique (SRSWOR) is used. First, we have taken three sample female FPCs, taking one from each division of the district with the

method of SRSWOR. Second, we have taken all members of each sample female FPC for our study. The number of members of each female FPC has been collected from the records of the respective FPC. However, total number of members from three sample female FPCs are 120 in number – Brindabanpur (56), Aguya (23), and Malibona (41). To make a comparative study of FPC members between female FPCs and joint FPCs, we took three joint FPCs along with three sample female FPCs for our study. First, each joint FPC has been selected based on the criterion of close proximity (nearest distance in km.) to each sample female FPC. Second, all members of joint FPCs have been selected for our final survey. Total number of members from three joint FPCs works out to 182 in number – Katul-2 (93), Balboni (44), and Baragari (45). Thus, the total number of members selected for our field study combining two types of FPCs together was 302, the distribution of members for female FPCs and joint FPCs being 120 and 182 respectively. We surveyed the FPCs under sample for about 8 months beginning from January 2003 to August 2003. During our survey, Participatory Rural Appraisal (PRA) sessions held in 6 villages under 6 FPCs provided the basis for estimation of social capital, but data was collected from all individual members of the respective FPCs through the scheduled questionnaire.

At the very outset, we examined some characteristics of our sample FPCs (Table 1). **First**, out of 6 FPCs under our study, almost all members of 5 FPCs are either scheduled caste (SC) or scheduled tribe (ST). In Baragari joint FPC about 80 per cent members (35 out of 45) belong to other backward caste (OBC). **Second**, the existence of female members in joint FPCs - both in general and executive committees - is insignificant. The number of female members in 3 joint FPCs works out to 7 only. Out of total members, the percentage of female members in Katul-2, Balboni and Baragari joint FPCs are approximately 3.22, 4.55 and 4.44 respectively. It implies that women are

commonly excluded or unable to participate in community institutions for joint FPCs; so women's separate role and involvement in committee formation, micro-planning, protection, benefit-sharing etc, are very important in the JFMP. **Third**, the natural forests in this area are basically sal (*shorea robusta*) forest. After felling, further planting is not, usually, necessary. In the case of raising plantations in forest areas, the main species preferred are *sal* and *eucalyptus*. **Fourth**, sal leaves are the main non-timber product of this area. The full maturity period of sal in this area is usually a period of 15 years. **Fifth**, the share of FPC from timber product is 25 per cent, which is usually paid to FPC members after 5 years; but forest department does not take any share from non-timber forest products (NTFPs). The members of FPCs receive 100 per cent share of NTFPs. According to forest officials, because of their 100 percent share of NTFPs, the poor forest communities themselves save the timber products; they also said that during 1980s there was a large illicit felling in that area; but during the beginning of 1990s poor forest communities themselves came forward to save their forests through JFMP. **Sixth**, more than 60 per cent members of each FPC live below poverty line (BPL) according to official records. Although most of the members in all FPCs live below poverty line, the proportion of BPL category is more existent among SC and ST categories. The proportion of BPL category members in all FPCs except Baragari is more than 80 per cent. In Baragari, about 80 per cent members belong to other backward caste category and most of them (23 out of 40) live below poverty line. **Seventh**, sal leaves and fuelwood are one of the main sources of the regular earnings for the survival needs of the families, which live below poverty line. Both male and female members of the households below poverty line sell these NTFPs after meeting their regular consumption needs. Other members usually collect sal leaves and fuelwood for their regular consumption needs. The average collector's price of

plain sal leaves varies between Rs. 3.50 and Rs. 7.00 per bundle (80 pieces) depending on quality and seasonal variations. Similarly, the average collector's price per gunny bag (about 20 kg.) of fuelwood ranges between Rs. 5.00 to Rs. 12.00 depending, mainly, on seasonal variation. Earnings from self-cultivation and/or wage labour in agriculture are also a main source of their survival needs. Sal leaves in this locality are used for two purposes - plain sal leaves that are used mainly for packing and sal leaf plates produced with the help of processing machine. Sal leaf plate has a great demand outside West Bengal. It is regularly exported to other states in India mainly by market wholesalers who purchase sal leaf plates directly from marketing agents other than collectors and export it outside West Bengal. **Finally**, the usual procedure for the establishment of both joint FPC and female FPC in the area we surveyed is that forest officials first speak to the local forest communities, local panchayet bodies about the utility of the establishment of FPC under JFMP. Later, local forest communities and local panchayet respond to it. But the establishment of Brindabanpur female FPC is a classic example in that the primary initiative for the establishment of female FPC was taken by the collective action of the female members of this locality. They came forward at first for the establishment of female FPC in their locality and local forest officials responded to it. *Mrs. Parul Lohar*, who received official recognition of her noble work from President of India, took the most important role of this initiative. Still, she is the leader of this committee.

Tables 2, 3 and 4 provide a glimpse of the measure of social capital estimated for 3 female FPCs – Brindabanpur, Aguya and Malibona – and 3 joint FPCs – Katul-2, Balboni and Baragari – under our study based on productivity, equity and sustainability respectively. Our study suggests that collective action is successful where an underlying tendency for united action already exists in a community based on tradition and cultural

values, absence or weak presence of traditional ascriptive hierarchies and endemic factionalism, and common identity on social and economics issues (Table 2). Such a tradition of pre-existing community solidarity with common identity is the basic principle for the success of collective action to other criteria – equity (Table 3) and sustainability (Table 4) – considered for measuring social capital of institutions. Aggregate result of Tables 2, 3 and 4 are portrayed in Table 5. The results show that the level of social capital is higher in all female FPCs because all these traditional characteristics of community solidarity and collective actions are more prevalent among each of the female FPCs than that of joint FPCs (Table 5). The level of social capital in Brindabanpur female FPC is the highest because it possesses all these traditional characteristics along with existing steadfast and effective leadership in building strong community solidarity. Despite the presence of higher level of education (Table 2) and ample scope of food-livelihood security from forest resources (Table 3), the level of social capital at Baragari joint FPC is the lowest because differences already existed in this village based on lower ranking of scores relating to all these traditional characteristics along with low cohesiveness within the community on leadership issue (Table 2). Moreover, there is an underlying conflict in the community of this institution to resolve conflicts among themselves as well as with the forest department (Table 4) and many members are not convinced about their duties and responsibilities of collective actions as a group (Table 3). But for Aguya female FPC and Balboni joint FPC, though the option of food-livelihood security for almost all members are limited from the forest resources (Table 3), the level of social capital in these two FPCs is higher than Baragari joint FPC, because there already exists an underlying tendency for united action to former FPCs based on traditional and cultural norms, presence of higher degree of social cohesiveness due to lower degree of traditional hierarchies and lower

endemic factionalism and fewer divisions arising out of differences in education, income and lifestyles.

One of the most fundamental indicators of productivity, to which all joint FPCs are lacking behind all female FPCs, is the active supporting role of officials (Table 2). Although all joint FPCs have low social capital for low active supporting role of officials in relation to all female FPCs, what is more important is that all joint FPCs have higher literacy level than all female FPCs, but the former possesses lower active supporting role of officials. This may be, mainly, judged by the fact that mistrust within community combined with traditional conflict regarding social structure, leadership, group capacity and confidence and socio-cultural factors in the joint FPCs compared with female FPCs helps to beget collision between forest officials along with other public officials and members of joint FPCs in building consensus for action plan of JFMP, financial grants for such plan and make lower social motivation for such activities among the former FPC members. All these factors also influence low level group-based natural resource regeneration and conservation, poor internal norms, mutual trust and role of clarity, high conflict to raise issues and resolves those issues, poor group attachment and low level maintenance of forest resources for all joint FPCs compared with female FPCs (Table 4). The underlying tendency for conflict that already existed among the FPC members of joint FPCs seems to be the major factor for lower active supporting role of officials (Table 2) and poor training by the forest officials to the FPC members of joint FPCs in relation to female FPCs (Table 4). In this situation, forest officials along with other local officials and local panchayet officials should play more positive role to build up harmonious relationships within community, try to change the values and attitudes of local people through prolonged interaction with local people in the joint FPCs. It is argued that for joint

forest management partnership to succeed the relationship between FPCs and local officials must be based upon mutual acceptance of clearly defined rights, responsibilities, accountability and shared understanding of participation (D'Silva and Pai, 2003: 1414). Where social cohesion and tradition of community solidarity are weak, effective village leadership as strong a leader as Mrs. Parul Lohar and support of local officials can help building community solidarity that contribute to high level of social capital. The work of Evans (1996) suggests that prior existence of higher level of social capital in many situations is not the crucial factor that creates synergy, bureaucratic institutions and people's organized participatory groups complement each other and public officials disseminate information, build consensus, tutor and cajole-leading to successful working of joint programmes (Evans, 1996:1122). As D'Silva and Pai (2003) points out, local officials must play a facilitative role in the establishedment and functioning of FPCs¹². But there is a lack of effective initiative in providing such a facilitative role by the local officials in joint FPCs under our study.

Conclusion

As the idea of social capital is emerging with greater frequency in discussion of development, whether of poor countries or of poor areas of industrialized countries, the measurement of social capital in this exercise based on 38 indicators under *three generic criteria – productivity, equity and sustainability* – for the micro level study provides an idea of the progress made by local decentralized institutions – forest protection committees – in terms of building social capital related to three sample female FPCs and three joint FPCs, where most of the FPC members live below poverty line and are dependent on forest resources for their food-livelihood security, under JFMP in Bankura district of West

Bengal. This study seems to be important because it attempts to study social capital in the comparative framework between two types of institutions – female FPCs and joint FPCs – in six villages, three for each type, in order to examine whether female FPCs have been more successful than joint FPCs in managing JFMP and have ensured better development strategies and benefits to the rural communities. This study shows that the tradition of community solidarity and developed network of relationship based on tradition and cultural values, absence or poor presence of traditional ascriptive hierarchies and endemic factionalism, and common identity on social and economic issues are the basic indicators for collective achievements that contribute in building trust among communities and provide coordinated actions creating an inner dynamic of the development of social capital. The study suggests that the level of social capital is higher for all female FPCs because all these pre-existing traditional characteristics of community solidarity, common identity, mutual trust and coordinated actions for development are more existent in each of the female FPC compared with that of joint FPCs. The level of social capital at Brindabanpur female FPC is the highest as it possesses the highest ranking of all these characteristics along with effective leadership in building strong community solidarity, collective action and the most developed network of relationships. The establishment of Brindabanpur female FPC is the classic example of the understanding profound pre-existing community solidarity and collective actions because, unlike the usual procedure of the establishment of FPCs in this region, the primary initiative of the establishment of female FPC was taken by the female members of this village themselves and forest officials responded to it. This study, however, supports that women's involvement in JFMP improves the efficiency of environmental projects and assists the solution of environmental problems and contribute to environmental sustainability.

Turning to joint FPCs, where women's role are insignificant, Baragari joint FPC has the lowest level of social capital due to existence of traditional mutual suspicion, mistrust, endemic factionalism, traditional hierarchies that marred its collective life, despite its possession of highest level of ranking in education and ample scope of food-livelihood security for poor forest communities. This study also suggests that the food-livelihood insecurity cannot destroy the level of social capital of institutions if there already exist an underlying tendency for united actions based on all these traditional social and cultural characteristics along with common identity based on education, income and lifestyles. But some of the common indicators, to which all joint FPCs are lacking behind all female FPCs, are related to the more facilitative role of officials in the establishment and functioning of the former FPCs. These are supporting role of officials, trust in recommendation and implementation of the action plan of the committee by the forest officials, maintenance of assets created, conservation of resources and training to the members.

There are instances that prior existence of social capital in many situations is not the critical factor in building social capital of institutions, public officials play a significant role in building social capital by ensuing broad-based selection of members along with inclusion of all disadvantaged groups in the decision-making process; acting as intervening role in resolving group conflicts (with the help of conflict-management mechanism); providing a supporting role related to the recommendation and execution of action plan, conservation and regeneration of forest resources and training to the FPC members, and acting as intervening role by introducing progressive changes in the fragmented character of traditional village structure. However, building social capital under JFMP in those local decentralized institutions where the role of pre-existing community solidarity and the

tradition of collective action based on traditional cultural values, high cohesive social structure and common identity on social and economic issues are strong, the network constitutes an input into development which needs to be accumulated and sustained over time, but for institution where such traditional network are weak, local officials should play more facilitative role in building social capital and also can help to sustain it for longer period of time.

Notes

- 1.** A version of this paper was presented at the UGC-sponsored state-level seminar on 'Social Sectors of West Bengal: Concerns, Challenges and Opportunities' organized by Department of Economics, St.Paul's C.M. College, Kolkata, under University of Calcutta, held on 20-21 March, 2004. We wish to thank participants in the seminar for valuable suggestions that helped revise the paper.
- 2.** In his empirical works based on the performance of Ghanaian manufacturing industry, Barr (2000) observes that social capital in the form of network takes seriously as a possible determinant for sustained endogenous economic growth.
- 3.** The central concern in Putnam's (1993) studies on Europe and US has been democracy and democratic functioning of institutions. He examined social capital in terms of degree of civic involvement as measured by voter's turnout, newspaper reading, membership in societies and clubs and confidence in public institutions. Woolcock (1998) provides a comprehensive account of social capital in his article. He made a framework for incorporating social capital into development theory and policy at the micro and macro levels. Seven substantive fields of social capital research in his works are: 1) family and youth behavior problems; 2) schooling and education; 3) community life; 4) work and

organization; 5) democracy and governance; 6) general cases and collective action problem; 7) economic development.

4. IRDP and JRY stand for the Integrated Rural Development Programme and the Jawahar Rozgar Yojana for poverty alleviation initiated in India in the 1980s based on asset and employment provision respectively.

5. The original definitions by Coleman and others emphasize that social capital is what lies beyond formal organizations and legislation. Coleman's (1988) three forms of social capital – obligations and expectations, information channels, and social norms – show this trend of thought clearly: formal regulations and organizations are not included. Fukuyama, a conservative thinker, go as far as seeing social capital as being in opposition to government-related institutions, in the sense that the more of the latter, the less will be of the former (Piazza-Georgi, 2002:472). For extensive discussion on this point, see Blomkvist and Swain, 2001 and Knack and Keefer, 1997.

6. The forest is an important natural resource on which the life of individuals and households in the community is critically dependent. Community initiatives to manage these frequently take the form of effective local institutions with defined structures, which are governed by collectively formulated norms and procedures, and impart a certain abiding quality to the social cooperation expressed through them. Such institutions would arguably not be possible except in communities, which have a fair degree of social capital (Jayal, 2001: 655).

7. Women are seen being closer to nature for their natural procreative function (Ortner, 1974: 71; Hobley, 1996: 19; Tinker, 1994: 367; Locke, 1999:235). The theoretical viewpoint of WED (Women Environment and Development) and Ecofeminism recognize special relationship between women and environment or women's 'closeness' to nature on

the basis of material role of women, and of natural and spiritual content of women's 'closeness' with nature (Sarker and Das, 2002: 4408).

8. After a long claim against development theory by feminist academics, it is suggested that development plans and projects would not succeed unless women's potential and actual productive roles are recognized. There is now a new equation: women + production = efficiency (Kabeer, 1994). A progress report on the World Bank's initiative for WID (Women in Development), which started during 1980s, focuses on increasing women's productivity and income, because this is considered the best way to help themselves and contribute to economic performance, poverty reduction, slower population growth and environmental sustainability (World Bank, 1990:61).

9. Village studies in India in the post-independence period have highlighted two significant features of social structure: traditional ascriptive hierarchies based upon caste and endemic factionalism. Much of the literature shows that dominant caste/class groups or factions have been able to capture most of the benefits of government welfare and developmental programmes. Studies have also shown that these features have destroyed trust and social capital in villages making collective action very difficult (D'Silva and Pai, 2003: 1409). See Pai, 2001 and Mohapatra, 2001 for an extensive discussion on this point.

10. The level of literacy is measured in the following forms along with the qualitative scores in brackets: Illiterate (1), Ability to read and write only (2), Primary (3), Secondary (4), Higher secondary (5), and above higher secondary (6).

11. D'Silva and Pai observe that traditional and cultural norms rather than education remain the main source of social capital in two villages – Behroonguda and Powerguda (D'Silva and Pai, 2003:1410).

12.The facilitative roles played by local officials are: **first**, they must ensure that the selection process of the community institutions is transparent and includes all disadvantaged groups in the decision-making process. Consensus based selection of members in an open meeting may work in tribal villages with little or no social differentiation, but may not be fully representative in villages; **second**, periodic conflict is inevitable when villagers are required to sacrifice individual benefits for a larger common goal, but if conflict-management mechanisms are put in place, the problems can be contained; **third**, the intervention of officials can introduce progressive changes in the traditional village structure.

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Table1: Some Characteristics of Sample FPCs in Bankura District of West Bengal

Division	Name of FPC and year of formation	Area under forest < ha.>	No. of members	SC member (ST member)	Sex		Distance from forest < km.>	Type of forest	Share of forest products for FPC member < % >
					Male {Female}	Sex under executive committee Male {Female}			
PANCHET S. C.	Brindabanpur 1991	56	56 51*	56 (0)	0 {56}	0 {6}	0.50	Natural	100 [25]
	Katul-2 1990	180	93 81*	93 (0)	90 {3}	5 {1}	0.20	Natural	100 [25]
BANKURA NORTH	Aguya 1993	13.75	23 19*	21 (0)	0 {23}	0 {6}	0.75	Planting	100 [25]
	Balboni 1993	70	44 39*	44 (0)	42 {2}	6 {0}	1.00	Planting	100 [25]
BANKURA SOUTH	Malibona 1996	70	41 37*	4 (37)	0 {41}	0 {6}	0.20	Natural	100 [25]
	Baragari 1996	70	45 28*	1 (4)	43 {2}	5 {0}	0.10	Natural	100 [25]

Figures within (), { } and [] represent ST members, Female members and Share of timber products respectively.

* Represents number of members lie below poverty line.

Table 2: Measurement of Social Capital of Forest Protection Committee for the Criterion Related to *Productivity*

Measurement criterion of social capital (<i>productivity</i>)	Female Forest Protection Committee			Joint Forest Protection Committee		
	Brindabanpur	Aguya	Malibona	Katul-2	Balboni	Baragari
1	2	3	4	5	6	7
Social structure						
1) Social cohesion	6.0	5.5	5.3	5.6	5.2	2.2
2) Endemic factionalism	5.8	5.3	5.5	4.8	5.0	1.8
Leadership						
1) Selection of leader	6.0	5.5	5.6	4.5	5.5	2.5
2) Sense of responsibilities to execute public work	6.0	2.8	3.5	5.1	4.8	4.8
3) Local network of political leaders and forest officials	6.0	2.1	1.6	5.0	4.6	5.5
4) Leader's presence and accountability in the group meeting	6.0	4.6	5.3	3.4	3.9	5.8
Group membership and sense of responsibility						
1) Sense of responsibility and role of members to group work	6.0	4.5	4.6	4.5	3.2	2.5
2) Active role of women	6.0	4.2	4.8	1.0	1.0	1.0
Group capacity and level of confidence						
1) Literacy level among members	2.4	1.5	1.9	2.8	3.3	5.4
2) Traditional and cultural norms	6.0	6.0	5.5	5.3	5.0	1.8
3) Trust within community	6.0	5.7	5.2	4.8	5.2	2.1
4) Accountability and transparency of institutions	6.0	6.0	6.0	4.2	3.6	5.6
External linkage						
1) Active supporting role of officials	5.6	5.4	5.7	3.0	3.4	2.2
2) Group-based micro credit programme	2.7	1.0	1.0	2.5	1.0	1.0
Status of financial capital base	1.8	1.6	1.5	2.3	1.4	1.0
Technologies and improvement	3.3	5.1	3.2	2.6	5.0	1.0
Total score on 96	81.6	66.8	66.2	61.4	60.1	46.2

Notes:- Qualitative scoring: 1=Negligible; 2=Low; 3=Medium; 4=High; 5=Very high; and 6= Excellent. For the sake of simplicity, all criteria in this exercise have been treated as having equal weights, through in practice the weights tend to differ across criteria. Any FPC which scores 'excellent' on all indicators of *productivity* related to the measurement of social capital of institutions has a total score of 96 (6 multiplied by 16), while that which scores 'negligible' on all indicators has a total score of 16(1 multiplied by 16). The average ranking of indicators for a particular FPC of any criterion is calculated with the help of arithmetic mean. Participatory Rural Appraisal sessions held in 6 villages under 6 FPCs provide the basis for estimation of social capital, but data were collected from all individual members of the respective FPCs through the scheduled questionnaire.

Table 3: Measurement of Social Capital of Forest Protection Committee for the Criterion Related to *Equity*

Measurement criterion of social capital (<i>equity</i>)	Female Forest Protection Committee			Joint Forest Protection Committee		
	Brindabanpur	Aguya	Malibona	Katul-2	Balboni	Baragari
1	2	3	4	5	6	7
Broad-base understanding of group activities						
1)Active participation of poor and marginalized members in group activities	6.0	6.0	5.2	4.8	5.2	1.8
2)Collective action within group	6.0	4.8	5.0	4.5	5.0	1.8
3)Keeping long-term interest of the institution	5.2	3.6	4.3	4.2	4.8	1.5
4)Discussing the importance of group activities	6.0	4.5	5.6	3.4	4.8	3.2
Group participation in decision-making	6.0	6.0	5.1	3.2	5.2	2.2
Equity in benefit flows	6.0	6.0	6.0	6.0	6.0	6.0
Livelihood impacts and reduction in vulnerabilities	6.0	3.2	6.0	5.2	2.6	5.3
Total score on 42	41.2	34.1	37.2	31.3	33.6	21.8

Table 4: Measurement of Social Capital of Forest Protection Committee for the Criterion Related to *Sustainability*

Measurement criterion of social capital (<i>sustainability</i>)	Female Forest Protection Committee			Joint Forest Protection Committee		
	Brindabanpur	Aguya	Malibona	Katul-2	Balboni	Baragari
1	2	3	4	5	6	7
Group-based natural resource regeneration/conservation						
1) Collective action in conserving resources	6.0	3.8	4.6	4.2	3.1	1.6
2) Collective action in regeneration of resources	5.2	3.5	4.3	3.3	2.6	1.0
Internal norms, mutual trust and role of clarity						
1) Mutual trust in recommendation of action plan of the committee by the forest officials	5.2	4.6	4.5	3.2	2.6	1.8
2) Mutual trust in implementation of action plan of the committee by the forest officials	4.8	3.8	4.1	2.6	2.0	1.2
3) Democratic functioning of the action plan	6.0	6.0	5.8	5.2	4.4	3.3
Group attachment						
1) Rigidity of functioning FPC	6.0	4.6	5.2	4.6	4.8	2.8
2) Share of periodical benefit (as per commitment) of timber products	6.0	6.0	6.0	6.0	6.0	6.0
3) Share of members from non-timber forest products (NTFPs)	6.0	6.0	6.0	6.0	6.0	6.0
4) Period of collection of NTFPs	6.0	3.4	5.6	6.0	3.2	6.0
Ability to raise issue and resolve conflict						
1) Ability to raise issue in meeting by any member	6.0	5.4	6.0	4.2	5.3	2.2
2) Ability of the group to resolve conflict	5.8	5.5	5.3	3.6	4.2	1.8
Maintenance of assets						
1) Maintenance of assets created	6.0	5.3	5.1	4.3	4.1	2.5
2) Attempt at soil conservation and protecting soil erosion	4.4	5.6	4.5	4.2	3.8	2.1
3) Training to the members by officials for maintenance of assets	3.4	2.6	3.2	2.2	1.8	1.4
4) Plantation	1.6	5.1	1.5	1.7	5.3	1.0
Total score on 90	78.4	71.2	71.7	61.3	59.2	40.7

Table 5: Measurement of Social Capital of Forest Protection Committee under Joint Forest Management Programme, Bankura District of West Bengal

Measurement criterion of social capital	Female Forest Protection Committee			Joint Forest Protection Committee		
	Brindabanpur	Aguya	Malibona	Katul-2	Balboni	Baragari
1	2	3	4	5	6	7
Productivity (total score on 96)	81.6	66.8	66.2	61.4	60.1	46.2
Equity (total score on 42)	41.2	34.1	37.2	31.3	33.6	21.8
Sustainability (total score on 90)	78.4	71.2	71.7	61.3	59.2	40.7
Grand total score on 228	201.2	172.1	175.1	154.0	152.9	108.7