

Social Capital and its Performance in Forest Conservation in Traditional and Non-Traditional Communities

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Social capital and its performance in forest conservation in traditional and non-traditional communities

A revisit to five communities from Vidarbha region in central India¹

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Abstract

Social capital has been recognized as the ability of communities to cooperate that different communities possess to different extents. But what are the factors that help build this capital in different communities in order to enable them to preserve a resource and what factors help sustain and maintain this capital over a period of time? This paper explores the change in role of social capital in forest conservation in traditional and non-traditional communities over a period of time and the factors that cause these changes. The dynamics of social capital are seen in five forest-dependent communities at two points of time from two forest rich districts of Vidarbha region of central India. Data was collected largely with the help of research instruments developed by International Forestry Resources and Institutions (IFRI) and through household survey. The case studies bring out the fact that not just traditional but non-traditional communities as well can build social capital to conserve a resource. However, over a period of time there is higher probability of consistent growth of social capital in communities with a pre-existent historical/cultural stock of the capital than communities that have built the capital recently. Social capital in local communities is affected by presence or absence of internal and external factors which also determine how social capital would get built and behave over a period of time. They explain the differences in levels of social capital in different communities as well. In the current JFM set-up it is important to understand and treat these differences and tailor the interventions in communities accordingly than following a blanket policy. Coordination of internal and external agencies with development of capacities of local communities and staff of implementing agencies is essential to build as well as sustain this capital in local communities.

Keywords: Forest conservation, Joint forest management, revisit, social capital, traditional and non-traditional communities, Vidarbha region.

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1. INTRODUCTION

The concept of social capital was introduced to describe resources of individuals like authority relations, trust, and norms. Some aspects of the concept made an appearance in economic and sociological literature (Sorensen 2000). As compared to the sociologists, economists were initially discrete in their use of the concept as well as in accepting its important role in development. However growing inequalities and environmental degradations cleared the path for this concept in economics too. It was in 1990's that the concept gained popularity through the works of Robert Putnam. Since then many scholars have evaluated it as an important development tool (TWBI 1998, Krishna 2002, Grootaert and Van Bastelaer 2001, Grootaert 2001, Layon 2000) that can have positive and negative effects on the traditional capitals like physical, human, and natural capital (Sorensen 2000, Pretty 2003, Ostrom and Ahn 2001, Pretty and Ward 2001). Rural communities in the developing world draw heavily from natural capital like grazing areas, forests, water resources, which are mostly properties with common access. The mammoth role natural resources play in the economy of developing countries can be judged by the fact that the livelihood dependence in South Asia alone (by various estimates) ranges from 15-29 percent, and in parts of Africa it is between 35-51 percent (Ghate, Jodha, and Mukhpadhaya – forthcoming). This nature makes the solutions to problems of natural resource management important for rural development (Sorensen 2000). Therefore, most of the policies and program aim at poverty alleviation through development and management of natural resources, and forests are one of them that have seen changes in management in many developing countries (Bwalya 2004, Magno 2001, Pretty 2003, Ghate 1992).

Participation of forest-dependent communities in the management of forests is being encouraged with adoption of inclusive management policies in different parts of the developing world. These have been adopted with active participation of local/indigenous communities/groups, thus recognizing the role of community-level action in natural resource management. However, community-level action depends on various factors and social capital is one of them (Baland and Platteau 1996, Wade [1988] 1994, Pretty 2003, Pretty and Ward 2001). It is understood “as a propensity for mutually beneficial collective action that different communities possess to different extents” (Krishna 2002). But what are the factors that cause the differences in propensity of communities to cooperate? In other words what factors help build this capital in different communities in order to enable them to preserve a resource and what factors help sustain and maintain this capital over a period of time? Are communities that have a historical/traditional endowment of social capital able to maintain and use it automatically or require external intervention to do so? Are non-traditional communities capable of building this capital? And what explains the inertia that some communities show to build this capital for conservation of forests? It becomes relevant to recognize these differences in those forest management set-ups where local communities are being increasingly handed responsibilities of forest conservation.

Studies on social capital have concentrated on factors that affect social capital (Krishna 2002, D'Silva and Pai 2003, Jain and Jain 2002). However, literature on temporal studies of social capital

and what affects changes in it over a period of time is limited. This paper explores the change in social capital, its role in forest conservation in traditional and non-traditional communities over two points of time, and the factors that cause these changes. The dynamics of social capital are seen in five forest-dependent communities from two forest rich districts of Vidarbha region in central India. These communities were first studied in the year 2000-2001 as part of an IFRI (International Forestry Resources and Institutions) pilot study. Varying levels of collective action was found in these communities dependent on various factors (Ghate 2004). A significant role was played by social capital. These communities have been revisited five years later. The paper will focus on changes in the performance of social capital from the stage of initiation or building of social capital (or lack of it) in these five communities to the current levels, using indicators of social capital. Changes in the level of social capital in each community over the revisit period and the factors that have contributed to these changes will also be explored.

In this paper, traditional and non-traditional communities have been differentiated. Traditional communities are mostly considered synonymous with indigenous or tribal groups, that have been traditional (for generations) forest-dwellers. These are mostly ethnically homogeneous groups. Social organization of such groups is shaped and based on the principle of collectiveness, mutual assistance, and where control and access to community resources are collectively regulated (Ramnath 2002, Subramaniam 1997, Roy Burman 2003). There is extensive knowledge about nature and little differences of education, income, and life-style in such groups. Non-traditional communities on the other hand are heterogeneous communities that have largely taken a heterogeneous characteristic due to in and out-migrations over the years, especially in the region where the study was undertaken (Ghate and Mehra 2004, Ghate 2004). With ethnic, and sometimes religious differences the collective way of life is not a norm. The systems of conflict-resolution, sanctions, and other forms of social life are influenced by social heterogeneity.

2. SOCIAL CAPITAL AND FOREST CONSERVATION

Protection of forests has become one of the central issues in developed and developing countries for their essential environmental services (Gibson *et al* 1999, Pretty 2003). In the developing countries the focus on protection of resource is from development point of view as a large part of the population in these countries depends on forests for various goods and services (Ghate, Jodha, and Mukhpadhaya – forthcoming, Pai *et al* 1998, Pretty 2003, Beck and Nesmith 2001). Thus, when forests are not protected there is a negative effect on livelihood, income, and subsistence of large part of the population, exposing them to poverty, causing migration, breakdown of rural traditional systems etc. In addition to the role that forests play in the well-being of forest-dependent communities, it has also been recognized that people have an important role in forest protection “because local communities live with forests, are primary users of forest products, and create rules that significantly affect forest condition” (Gibson *et al* 2000). With constant interaction with nature local communities develop common understanding and ability to cooperate which can largely help in evading the deterioration of common pool resources like forests. This ability is the social capital of the communities (Ostrom 1990, D’silva and Pai 2003). The existence of social capital in a community or a group of people lowers the cost of transaction. It facilitates cooperation (Pretty 2003). It is now been considered an important tool for poor communities that can help them overcome poverty (Collier 1998).

With its growing popularity there are many definitions that have come up to clarify the concept. Social capital has been recognized as a community trait and thus a public good. It has been termed by economists as 'social' as it is a result of interaction of some non-market agents, which leads to an economic effect. It is a 'capital' as it is a "flow which generates stocks of inputs into the production process such as trust, knowledge, and norms" (Collier 1998). It helps a group of people to plan, coordinate, effectively implement ideas, and manage resources through solidarity, shared understanding, trust, rules, and norms (Blomkvist and Swain 2001), resolve conflicts, fight poverty, and use opportunities better than those who do not have this capital (Moser 1996, Narayan 1995). Thus, social capital is relational or cognitive as well as structural. Cognitive/relational social capital includes values like trust, solidarity, and reciprocity. These values help people work for common good. Structural social capital on the other hand includes composition and practices of institutions (formal and informal) (Krishna and Shraders 1999, Westermann, Ashby, and Pretty 2005, Uphoff and Wijayaratra 2000, Ostrom and Ahn 2001). These constituents of social capital supplement and complement each other. The effectiveness of these constituents indicates towards the existence of social capital.

Institutions as part of structural social capital are arrangements that represent ideas about right and wrong and appropriate and inappropriate public behaviour (Krishna 2001). In this arrangement rules have a major role to play as they distribute costs and benefits among people involved in a relationship created through institutions. Rules can overcome free-riding and opportunistic behaviour, when they are backed by sanctions/penalties. Institutional rules are considered social capital (Ostrom 1992a), because if members of an resource-managing institution are able to form rules, agree to abide by them, and succeed in excluding those who do not follow these rules, then there is creation of values like trust and reciprocity in that group (Ostrom 2000). There are certain properties that rules should contain in order to become effective. They should be devised and enforced internally (Ostrom 2000, Wade [1988] 1994, Baland and Platteau 1996, Tang 1992); should be linked with sanctions (Coleman 1987); should ensure fair distribution of benefits as that can "help to build trusting relationships" (Bowles 1998); should be few in number and clear in what action is expected from those who follow them (Ostrom 1992b); and should not change rapidly, yet evolve with changing times (Ostrom 1992a). Equally important is that rules are formulated with collective decision of all those who are likely to be affected by the rules. Thus participation of all sections is important. Misinterpretation of rules and incompatible interests can lead to conflicts. Thus, mechanisms to resolve conflicts are essential in order to ensure continuance of collective action and cooperation. However a mechanism is likely to be effective if it is indigenous (Jain and Jain 2002) and cost-effective (Krishna 2001).

Supporting the sustenance of structural social capital is cognitive social capital, which includes values such as reciprocity, trust, and shared/common understanding. Erosion of values like reciprocity may lead to destruction of a resource or a public good (Oakerson 1992). Reciprocity can erode due to conflicts, unfair rules, regulation, and sanctions. Inequalities in benefit sharing can be a part of the reason (Ostrom 1995) and "corruption and abuse of authority may contribute to inequalities" (Oakerson 1992). This can corrode trust that people share. Trust is important as it "lubricates cooperation" (Putnam 1993). Those societies or communities that have higher level of trust have to depend less on external agencies or formal institutions to enforce an agreement (Knack and Keefer 1997). Additionally, values like shared understanding or homogeneity of purpose are also important and can be responsible for cooperation in socially and economically heterogeneous communities and help in survival of institutions (Poteete and Ostrom 2004).

Like the conventional capitals, social capital also requires investment. It can erode or deplete if not used or is misused (Throsby 2001, Woolcock 1998, Ostrom and Ahn 2001). It also has a stock that can lead to a flow in the form of economic returns. It may not be possible to build this capital over a very short period of time as trust, reciprocity, and institutions take time to build effectively. But it is not necessary that social capital has to be a historically fixed endowment (Schneider *et al* 1997). There are many agents that can help build or enhance this capital. These sources of social capital can be in the form of effective leadership; homogeneity of population; tradition of participation or existence of traditional institutions, knowledge, and sustainable management practices; felt or perceived scarcity of the resource; local NGOs; committed government officials (D'silva and Pai 2003, Baland and Platteau 1996, Krishna 2001, Ghate 2003, Gadgil *et al* 1993).

In this paper the two widely accepted forms of social capital, that is, cognitive and structural, have been considered. In order to measure social capital, the elements of social capital recognized by scholars under the two broad forms have been incorporated as indicators of social capital. These are:

1. Existence and functioning of forest institution: rules and regulations in use, level of participation of people in various activities of the institution, mechanism of distribution of benefits/costs, perception about the mechanism.
2. Conflict resolving mechanism: mechanism that is effective in resolving conflicts.
3. Infractions and penalties: level of compliance to rules and effective penalty structure to deal with infractions.
4. Trust: In general and related to forest activities
5. Reciprocity: General and forest-related activities
6. Shared understanding and clarity about purpose of collective action: Shared and common understanding about forest conservation, clarity about benefits of collective action and social capital.

3. FOREST CONSERVATION IN INDIA

India has a rich reserve of natural resources and forests are among them. At present around 23 percent of India's geographical area is forested (Saigal, undated). However, this resource rich country also has over a quarter of its population below poverty line (TWBI 2004) of which a major proportion lives in the rural areas depending on forest for their subsistence. Forest policies in the past ignored this fact as they took away the access and management rights of these communities. Social capital in these communities existed in the form of community level institutions, practices, norms, and collective and shared understanding about prudent resource use (Gadgil and Guha 1992, Krishnan 2000, Ghate 1992). With the advent of the colonial rule local communities lost their rights of access and use. Consequently, local level institutions and practices also faded in the background. Even after independence, government of India continued with the colonial forest management policies of exclusive control. Forests were used extensively for industrial development at the cost of subsistence of local communities. With no stakes in the resource and limited access, some communities exploited the resource unsustainably. There were others who continued to practice prudent use of the resource and develop institutions to manage them despite lack of ownership or management rights over the resource (Gadgil and Berkes 1991, Gadgil and Subhashchandra 1992, Roy Burman 1985). However, with alarming decline in forest cover in the country, growing poverty of forest-dependent communities, and increased pressure from international donor agencies, the government was prompted to accept stakes for local communities in the management of forests.

Participatory forest management was introduced in 1990 through the Joint Forest Management (JFM) program. Thus, role of communities in forest management came to be accepted again with the decentralized policy. Since its initiation, JFM has grown many folds. There are 84,632 Joint Forest Management Committees (JFMCs) in 28 states of India managing over 173 million hectares of forest area (RUPFOR 2003). However, even after its 15 years of existence mixed performance of this joint management initiative in India (Damodaran 2003, Anonymous 2005, SHODH 2005, 2006a, 2006b) is raising questions about the factors that are required for incorporation in the programme in order to ensure its wider success at the local level. Choice of communities that should be incorporated in this decentralized fold is also important. It becomes pertinent because more and more communities and thereby increased forest area is being brought under the purview of participatory forest management and a great deal of responsibility is being placed on the local communities for managing an important national resource. Creation of Forest Development Agencies (FDAs) has been a step in this direction.

FDAs are federations of a group of JFMCs conceived with the idea of devolving further powers to local level institutions like JFM committees (JFMCs) to take wider developmental decisions. This is in order to ensure effective implementation of programmes designed for poverty reduction. In addition to this, JFM in some states of the country has moved on to Community Forest Management (CFM), providing the communities with more autonomy than under JFM. Under these circumstances of increased role of communities in forest management, identifying factors and abilities of local communities and then building on them becomes pertinent. But over a century of exclusion of the local communities from forest management in India questions the wide-spread capability of local communities to manage the resource which they once had, which is the social capital that the traditional communities once possessed. But does this mean that only traditional communities possess a stock of social capital and use it automatically to manage a resource? Or non-tribal/traditional communities can also manage forests collectively by building social capital? Do different factors contribute to the building of social capital in such communities? Are they able to maintain this capital over time? If yes what contributes to the continued role of social capital in forest conservation? What aspects of this capital can be enhanced in communities to facilitate better forest management?

4. BACKGROUND OF STUDY SITES

Five case studies were selected from central Indian region. Despite major changes in land use from the colonial period, this region still has the most extensive forest cover in India (Rangarajan 1996). It is mostly inhabited by tribals. In fact the highest tribal population inhabits this region (Anonymous, undated). Vidarbha region, which forms part of the central Indian region, is territorially the eastern part of Maharashtra State. Gond is the dominant tribe here. This region has over 56 percent of the forest area of the State. 32 percent of the total forest area covered under JFM in the State is in this region. However, it is also a poor region with a high percentage of population below poverty line (BPL). The two districts of this region (Gadchiroli and Chandrapur) from which the five case studies were selected remain one of the few districts of the state with good forest cover. More than 69 percent and 34 percent of the geographical area of Gadchiroli and Chandrapur districts are forested respectively. Thus, they also have a high percentage of forest-dwelling communities. The five settlements chosen from these districts form two clusters. Villages Saigata, Lakhapur, and Maral Mendha are neighbouring villages and form one cluster from Chandrapur district, while Mendha and Lekha form the other and are neighbouring villages too from Gadchiroli district.

All the five settlements are small villages. Barring village Mendha which has 100 percent tribal population, the other villages comprise of diverse caste and tribal groups. These are all small villages with population ranging from 743 to 422, and 145 to 83 households. Over the revisit period the total number of households have gone up in all the five settlements and so has the level of literacy with the introduction of Sarva-Shiksha Abhiyan (complete literacy drive) by the central government. Agriculture remains the dominant occupation. Paddy is the main crop grown and is mostly consumed for subsistence. People are now able to consume the crop for longer periods than what it was five years ago. Some villagers attribute it to increased cultivated area due to encroachments on forestland which have gone up in all the study villages. Other than agriculture people also work as farm and forest labour. Employment from work created by the Forest Department in the forest like plantation, bamboo cutting etc is a source of income, especially for the villages like Mendha and Lekha as they are federated under FDA. Lakhapur never received this aid as it has not joined the JFM program. In Saigata there has been no plantation work since 1999 as it is not federated under FDA since it is due for benefit-sharing from sale of timber as per JFM norms. However, people do get work created by the government like road-making, digging drains etc. under the Employment Guarantee Scheme. In addition to labour work people earn a living by operating petty businesses. These have increased in the past five years.

For meeting most of their subsistence needs people in these villages depend extensively on the forests as it plays an important role in running the economy of these villages. The forest supplies wood for all the agricultural implements. Leaf litter is used as manure for agricultural crops. Watchtowers as well as small sheds in the agricultural fields are also made of wood, grass, and bamboo, and wood is also used as cooking fuel. Minor forest products like fruits, leaves, nuts etc. especially Moha (*Madhuca longifolia*) flower and Tendu (*Diospyros melenoxylon*) leaves are a source of income for many households. This is true for villages Mendha, Saigata, and Lekha where the availability of these two products is better than the other two villages. Fruits, nuts, tubers, and mushrooms form a part of the diet of the villagers. Plants are also used for curing various ailments both for humans as well as domestic animals. Bamboo is one product that is used extensively in Mendha and Lekha, but not in the other three villages as its availability is low in those forests. Maral Mendha has negligent forest cover. Only part of the fodder needs are met by their forest area. As a result, people are using other options like tractors instead of wooden ploughs and neighbouring forest areas.

5. METHODS

The techniques of data collection used can be broadly classified as secondary and primary sources. Secondary sources of data include - census information collected by village school teachers, socio-economic information collected and recorded by the villagers, micro-plans prepared by the Forest Department, and records maintained by the Forest Department. Primary data was mainly collected through three methods of data collection. These are - **International Forestry Resources and institutions (IFRI) protocol** which consists of a set of 10 research instruments to collect socio-economic, institutional, and forest data. Questions or verifiers were identified from this set that best captured the values of the indicators of social capital. Group discussions were conducted to get information for these instruments at the community level. **Household survey** was also conducted to substantiate as well as supplement the data collected through IFRI protocol. A set of questions

was made for each of the six indicators of social capital. For values like trust and reciprocity various proxies/indirect questions were incorporated. Questions from household questionnaire developed by IFRI were also included. A sample of 10 percent households was taken in each settlement. The sample covered all caste/ethnic groups in case of heterogeneous communities, where normally the entire household took part in the discussion. Care was also taken to integrate the various income groups in the sample. The third method was **researcher's observations**, which was based on the general observations of the researcher, comments made by persons gathered during household interviews, informal talks, and observation of records maintained by the local level forest associations. These three methods were combined to analyze the current levels of social capital. In order to see the changes in social capital over the revisit period only IFRI data was used, as the household survey was not conducted during the first visit.

Since the indicators of social capital are qualitative in nature they are quantified using the qualitative data analysis tool known as 'Multi-criteria Analysis' (MCA). A standard feature and outcome of multi-criteria analysis is a 'performance matrix', or consequence table. MCA uses two techniques. These are scoring and weighting (Anonymous 2001). Under 'weighting' numerical weights are assigned to define the strength of each method. In order to find the current levels of social capital in the five communities the three methods of data collection are assigned different weights. The highest weight was assigned to the six indicators under IFRI as this method most extensively covers aspects of structural social capital compared to the other two methods of data collection. Thus, each indicator under household survey was assigned lower weight than IFRI, followed by the method of 'Researcher's observations'. Within each indicator the questions/verifiers that capture the values of each of the indicator, were assigned weights as per the strength of the question/verifier to best capture the value of each indicator. After this the scoring technique was used. 'Scoring' demands that the expected consequences of each question/verifier are assigned a numerical score on strength of preference scale. More preferred option/answer of a question scores higher on the scale, and less preferred option/answer scores lower. The scores of each question/verifier for each case study are aggregated under each indicator to arrive at a value under one indicator. Values of all the indicators are aggregated to arrive at the final performance of each case study.

6. PROCESS OF BUILDING OF SOCIAL CAPITAL IN THE COMMUNITIES

Building process of social capital in forest conservation in the villages has been different. In the late 1960s and early 1970s the forest of Lakhapur, Saigata and Maral Mendha faced extensive damage at the hands of people who made a living by selling forest products. With growing demand for fuel wood in nearby town the pressure on the forest increased and most of the forest cover was lost. People started to face scarcity of forest products and negative effects on forest-dependent occupations. In Saigata it was a resident of the village who realized the need for collective effort for protecting the forest. He and a group of people from the village took up small group activities in the village. Benefits from such group activities demonstrated to the rest of the village about the advantages of collective effort and thus encouraged people to come together. Slowly these collective tasks were taken on a larger scale which helped overcome the caste differences, developed norms of trust and reciprocity, and built consensus in the village about need for forest protection. Group activities oriented them to rules, infractions, penalties, and conflict-resolution. An informal forest association was formed in 1979. The village came under the JFM fold in 1996.

In Lakhapur too scarcity of forest products triggered forest protection. A resident of the village initiated forest protection and slowly built consensus in the village. The villagers set up a forest protection association in 1970. They approached the local forest department for support to stop anti-forest activities of other villagers in this forest. However lack of support from the Forest Department in this regard created discontent against them. Consequently, government officials were banned from entering the village. This action was also prompted by a religious leader based outside the village. His teachings of 'village self-rule' and techniques were based on religious dictates and taboos which helped bring the community together on various issues but pushed internal leadership in the background. However, over the years his following reduced. His inability to resolve various conflicts in the village opened up the divisions that were lying latent in the village. Lakhapur never joined the JFM program due to constant conflicts with the local Forest Department.

Unlike Saigata and Lakhapur, people of Maral Mendha failed to protect their forest. A group of people in this village did try to initiate forest protection, but failed due to vast differences in economic needs, divisions, and lack of leadership. For majority of the people increasing area under cultivation was important as they belonged to the caste-group of vegetable-growers. Encroachments, charcoal and brick-making put heavy pressure on the forest. Over the years what has added to the problem is a proposed irrigation canal that is likely to pass through the forestland of Maral Mendha. People have cleared more parts of the forest and have encroached in anticipation of getting compensation from the government.

Mendha and Lekha not only shared the same forest area but also the history of forest abuse at the hands of the local Forest Department as well as the local communities surrounding this area. A movement in that area calling for revival of tribal traditional practices and rights inspired a resident of Mendha, along with a group of his fellow-villagers to disallow the activities of the Forest Department. But collective effort of the villagers was needed. Helped by a local NGO the group decided to bring the community together by reviving traditional practices and institutions that encouraged collective action. This was the stock of social capital lying dormant. The villagers got together and started forest protection. In 1989 the villagers set-up an informal forest protection association. They joined the JFM fold in 1996 and were federated under FDA in 2003.

In village Lekha forest protection is a recent development. This was initiated from various quarters. As the forest within the boundary of the village was unprotected and was facing indiscriminate extraction, forest products started to get scarce. They tried to shift the pressure on the forest of Mendha, but the forest association of Mendha did not allow it. Harvesters from Lekha were caught and fined many times. This prompted them to think about protecting their own forest. Additionally, awareness building by the Forest Department and the people of Mendha, and efforts of a local leader helped develop a common opinion in the village about forest protection. Forest protection started with setting-up of a JFM association in 2001. It was federated under FDA in 2003.

7. SOCIAL CAPITAL AT PRESENT

The process of building of social capital was inspired by some common factors in these villages like scarcity of forest products and role of leadership. However there were differences too. The analysis of the revisit data indicates highest level of social capital in village Mendha. It is closely followed by Saigata. Maral Mendha has no social capital in terms of forest conservation, and very low social capital was found in terms of other activities of the village. This section highlights the performance of the villages on various indicators of social capital and the points of difference that cause variations in performance (see table 1 below).

Table 1: Performance matrix: Current level of social capital in five case studies

INDICATORS	Maximum possible score	Saigata	Lakhapur	Maral Mendha	Mendha	Lekha
<i>Existence and functioning of forest institution</i>	240	170.00	169.00	0.00	229.50	167.50
<i>Conflict Resolution Mechanism</i>	240	170.00	146.00	128.50	239.00	159.00
<i>Infractions And Penalties</i>	240	166.00	146.00	0.00	201.00	108.00
<i>Trust</i>	240	132.00	114.50	22.50	169.00	87.50
<i>Reciprocity</i>	240	155.00	96.00	27.00	168.00	73.00
<i>Shared understanding and clarity about purpose of collective action</i>	240	200.00	164.00	28.50	209.00	155.50
<i>Total</i>	1440	993.00	835.50	206.50	1215.50	750.50

7.1. Indicator 1: Existence and functioning of forest institution

As Putnam (1993) puts it “it is the institutions that can instill habits of cooperation, solidarity, and public spiritedness in its members”. Thus, habits of cooperation and public spiritedness can be judged through level of participation of all members (including women) in activities of forest protection, regularity of meetings, attendance in the meetings, representation of all sections of the village in the decision-making body, how active the association is, existence of rules of protection and use, knowledge about rules among the users, whether rules are considered fair etc. If rules are simple and establish simple and fair systems of distribution, it can make monitoring easy. It will also ensure better understanding of the rules and thus their following. Which means the chances of users misinterpreting the rules and causing conflicts will be less. Mendha has performed the best on this indicator, followed by Saigata and Lakhapur in the second and third positions respectively.

The following table provides a background of the forest associations in the case studies. Out of the four villages that have forest-governing associations, Lakhapur is the only one which is not registered under JFM. This has turned out to be a disadvantage for the forest association of Lakhapur as it has no financial or technical support from the forest department in forest augmentation activities like plantation. Mendha forest association, which like Lekha is federated under FDA, has a unique feature. It has a traditional institution known as the *Gram Sabha* (GS) which is the main decision-making body of the village dealing with all the issues (forest and others) of the village. The whole village constitutes this body. It is a federation of all the village-level

institutions including the forest association. Thus the forest association forms a part of the formal federation under FDA and traditional federation under GS. The forest association of Mendha is the most active among the four associations, where it carries out some activities with the aid of the forest department while other activities are carried out on its own. Meetings of the executive and general bodies are regular and well-represented across class and gender (see table 2) compared to other villages. Comparatively, representation on women in decision-making is missing in Lakhapur.

Table 2: Forest Institutions

	Saigata	Lakhapur	Maral Mendha	Mendha	Lekha
<i>Forest Association</i>	Yes	Yes	No	Yes	Yes
<i>Under JFM</i>	Yes	No, informal	N/A	Yes	Yes
<i>Under FDA federation</i>	No	No	N/A	Yes	Yes
<i>Executive body of forest association</i>	Yes	Yes	N/A	Yes	Yes
<i>Meetings</i>	Irregular	Irregular	N/A	Regular	Irregular
<i>Percentage of women members</i>	30	Nil	N/A	50	33
<i>General Body</i>	Yes	Yes	N/A	Yes	Yes
<i>Meetings</i>	Regular	Regular	N/A	Regular	Irregular
<i>Tenure of Forest Association (years)</i>	5	1	N/A	5	5
<i>Various activities of the association</i>	Guarding the resource and distribution of forest products through rules.	Guarding the resource and distribution of forest products through rules	N/A	Plantations, harvesting forest products, collective selling of minor forest products, distribution of forest products via rules, guarding. Some aided by the FD, while others not.	Plantations, guarding the resource and distribution of forest products through rules

Rules for using the forest are formed by all the four forest associations, which are mainly restricted to the main forest products. However, it is only in Mendha, followed by Saigata where rules of forest use and mechanism for cost sharing are respected by majority of the households of the respective villages (see Table 3). This perception is essential for sustainability of rules and their following.

Table 3: Rules for forest use

	Saigata	Lakhapur	Maral Mendha	Mendha	Lekha
<i>Rules of forest use</i>	Yes	Yes	N/A	Yes	Yes
<i>Major forest products</i>	Timber, fuel wood, fodder	Timber, fuel wood, fodder	Fodder	Fuel wood, bamboo, Moha	Timber, fuel wood, fodder
<i>Rules for Fodder</i>	No	Restriction on use area	N/A	Restriction on use area	Restriction on use area
<i>Rules for fuel wood</i>	Fixed quantity in cartloads	As per requirement	N/A	As per requirement but ceiling imposed by JFMC	On payment basis in cartloads. Head loads as per requirement
<i>Rules for Timber</i>	Quantity ascertained and decided by the JFMC	Harvested every five years and equally divided among HHs	N/A	Quantity ascertained and decided by the JFMC	Sold by JFMC at a nominal rate
<i>Rules for bamboo</i>	No – as negligible availability	No – as negligible availability	N/A	Yes, fixed quantity to a quarter HHs each year	Sold by JFMC at a nominal rate
<i>Rules of cost sharing</i>	Yes – Rs. 160 per HH annually	Yes – amount fixed each year as per availability of funds with association	N/A	Yes – voluntary work and patrolling by all	Yes – voluntary patrolling
<i>Effectiveness of rules</i>	Yes (slight laxities in protection in past five years)	Yes (laxities in protection activities)	N/A	Yes	Partial (major laxities in protection)
<i>Awareness about rules</i>	Yes	Yes	N/A	Yes	Partial – due to low participation of member HHs
<i>Rules – clear, easy, flexible, legitimate</i>	Yes, considered by almost all	Partial – considered less flexible	N/A	Yes, all	Partial
<i>Perception about rules of cost sharing</i>	70% found it fair and equitable	50% found it fair and equitable	N/A	100% found it fair and equitable	50% found it fair and equitable

As mentioned earlier, the extent of effective functioning of an association can be gauged by the participation of the concerned members in its activities. Thus participation in forest protection, in meetings and thus decision-making across class, caste and gender are important determinants of participation. People's level of participation was also found out from the extent of awareness they have about the financial status of the forest association. This would depend on how accessible are the records of the association to its general body members and how keen are the general body members to know about it, thus keen to actively participate in the activities of the association.

Participation of people in all the activities of the forest association was found best in Mendha (see Table 4). Unanimity in decision in the general body meetings is very important and is an outstanding feature of this village. Another outstanding feature of the village is that these meetings are chaired every month and the position is rotated between the adults of the village, providing exposure to all to handle a responsible position. Strong sense of ownership towards the resource contributes towards high level of participation in Mendha. Comparatively the level of participation was found low in Saigata, although the village performed better than Lakhapur and Lekha. Participation of people in meetings has become low and meetings are held more frequently as people don't get together. Low participation is due to a conflict in the village. Unlike Mendha most of the important decisions in Saigata are taken by the governing body of the forest association and then put forth in

the general body meeting for discussion. In Lakhapur regularity in participation in meetings and payment of annual contributions are the only highlights of participation. This is mainly because these annual meetings are the only way people can put forth their annual demands for forest products. However participation in forest activities like protection is mostly left to the paid forest guards. Level of participation in forest activities in Lekha is low as this village is divided on various issues. There are groups that support the current governing body of the forest association and those who do not. This is one of the reasons that the all-general meetings are highly irregular. Most of the time it is difficult to get people together for these meetings, thus there are hardly any collective decisions. Most of the decisions are taken by the governing body, which the members of the general body do not trust because there are reports of members of the governing body being corrupt and indulge in anti-forest activities.

Maral Mendha has no forest association and has thus not scored on this indicator.

Table 4: Level of participation in forest association activities

	Saigata	Lakhapur	Maral Mendha	Mendha	Lekha
<i>General Participation in Meetings</i>	Irregular	Regular – only means to present annual demand for forest products	N/A	Regular	Irregular
<i>Participation of women in meetings</i>	Low	Missing	N/A	Partial	Low
<i>Participation of women in forest protection</i>	Partial – as per need	Very low	N/A	Active	Active
<i>Participation of HHs in forest protection</i>	Good – assist as and when need arises - despite paid forest guard	Poor – that is why need for paid forest guards	N/A	Active – all HHs patrol on rotation basis	Majority of HHs patrol on rotation basis – laxities in patrolling reported
<i>Participation in cost sharing for forest protection</i>	Irregular annual contribution – due to recent conflict	Regular contribution – out of fear of losing access to forest	N/A	Regular and voluntary participation	Larger participation of poor HHs than rich HHs – cause of conflict
<i>Participation/awareness of financial dealings of association</i>	Only 40% HHs – accusation of corruption	60% HHs	N/A	More than 70% HHs – no accusation of corruption or financial irregularities	60% HHs – accusations of corruptions and anti-forest activities

7.2. Indicator 2: Conflict resolving mechanism

Conflict resolution is very important in order to ensure continuance of collective action and cooperation. Conflict resolution helps to build and maintain trust. Indigenously developed conflict-resolving mechanisms are likely to be cost-effective thus higher chances of them being followed. However, they are likely to be effective if people have faith in the mechanism. In the five case studies it is found that there are no water-tight compartments as far as issues of conflicts are concerned. Most of these disputes are found to be inter-related. Mendha scored the highest on this indicator as it has the most well-developed and indigenous conflict-resolution system locally known as *Nayay Panchayat*. It is a traditional and democratic system of conflict resolution structured in the same manner as the court of law in India. It is well accepted as it is headed by the local priest who is also the police *patil* (local representative of the police). Thus it is a blend of modern and traditional authority. Conflicts do arise in Mendha and have erupted in the past two years. But they have been resolved and are channeled in a positive way. In Mendha 100 percent households responded that they follow the judgment of the *Nayay Panchayat* and external authorities have never been called to sort any conflict in the village. In the other villages diverse mechanisms of conflict resolution exist. These villages being heterogeneous in nature each caste/tribe group has its own head/elders to resolve conflicts that arise in that group. However, conflicts are resolved by the whole community when the conflict is between two caste/tribe groups. Additionally, it is the modern *panchayat* head, that is, the *Sarpanch* and the Police *patil* who also help resolve conflicts. In Saigata people in general reported approaching the *Sarpanch*, Police *patil*, or the community. However, 90 percent of the sample households reported of intervention of external authorities in conflict resolution on certain occasions. Thus indicating towards low effectiveness of internal conflict resolving mechanisms. This was also found to be true in village Lekha. In both the villages the cause of conflict has been not related to forest, but has percolated in forest-related issues. However, conflict resolving mechanisms were found to be least effective in Maral Mendha and Lakhapur where all the households reported that police has been called quite often to the villages. In Lakhapur divisions are based on caste and on political and religious ideologies.

7.3. Indicator 3: Infractions and penalties

Sanctions or penalties ensure that the group of people on whom the rules apply, abide by the rules. A person is likely to abide by a rule if the sanctions are certain to make not following the rule less attractive than following it (Coleman 1987). Thus rules are linked with sanctions. They reduce or stop opportunistic behaviour and fairly distribute the costs and benefits of cooperation among the members of a group, further enhancing cooperation. The reverse can reduce levels of cooperation. However, increased number of infractions indicate that the penalty system is not effective. Infractions in all the villages take place in some form or the other. However, in case of Mendha and Saigata 70 percent of the households reported that rules are complied from 'most of the time' to 'complied sometime'. However, in Saigata people reported that there are increased illicit cutting and encroachments as there are laxities in protection efforts, mainly because the forest guard has not been paid for the past 3 years. The conflict in the community has caused reduced contributions to pay the forest guard. Comparatively, only 20 percent in Lakhapur reported that rules are complied most of the time. In general, they were hesitant to respond to this query. As a result 30 percent did not respond at all and from the others information was accessed indirectly, which indicated that infractions do take place often. However major infractions were reported in Lekha where 80 percent

of the households reported that people break rules often by extracting forest products more than they have permission for and 20 percent reported that there are people selling and smuggling not-permitted forest products. Majority of the households state that forest protection started very enthusiastically in Lekha initially. However, over the years internal conflicts and corruption in the association have made the rules ineffective. In Mendha majority of the households (90 percent) responded that penalties are imposed on all those who break a rule irrespective of their position in the village and were thus considered fair. 80 percent in Saigata reported that whenever people are penalized, the penalties are imposed fairly. In Lakhapur, 60 percent found the penalties fair. Comparatively, only 10 percent in Lekha reported that penalties were imposed fairly. A substantial number felt that the elite of the village were spared.

7.4. Indicator 4: trust

“Trust lubricates cooperation” (Putnam 1993). In other words, higher the level of trust in a community higher are the chances of cooperation and reciprocity. Ineffective conflict-resolution breeds mistrust among people. That is what is happening in villages like Saigata, Lekha, and Lakhapur. In Lakhapur it seems conflicts are a regular feature, erupting now and then. Some of the conflicts have erupted to such large proportions that people have been sent to jail on many occasions. There are political and social divisions in the village. Even the self-help groups that are formed in the village are based on caste. Not only this but there is an ideological divide between those supporting the teachings of the religious leader and those who do not. His followers dominate most of the village level associations including the forest association. The non-followers many a times follow rules and restrictions due to the dictates of this dominant group. People are not allowed to speak anything against the systems that have been brought in practice by religious leader. This division observed is substantiated by the household survey and IFRI by the low levels of trust among people of Lakhapur. In villages Saigata and Lekha too there are unresolved conflicts that people reported. In the past five years relations among the residents of village Saigata have soured. The rift in the community has evidently percolated to the forest association. People are irregular in attending meetings and paying the annual contribution. The governing body of the forest association is not trusted, specially the President. He is accused of embezzling the money saved by the association. This is another reason that some people have stopped paying the annual contribution. This has led to some mistrust among the people in the village. Since this issue has not been resolved it is only eating into the trust that people once shared. However, unlike Lakhapur people in Saigata are not divided on the basis of caste and tribe. Efforts made in the past by the leader to unite the community, melting all caste/ethnic barriers, still exist. That is why 70 percent of the households in Saigata said they trusted their fellow villagers. But majority showed mistrust in the elected body of the forest association.

In case of Mendha there are high levels of trust. All the households responded that there is trust among households in terms of lending and borrowing. In terms of forest use and forest association people of Mendha showed high levels of trust not only in each other but in the forest association as well. 60 percent households responded that they trusted the fact that people in the village will not break rules and thus there was no need to keep a watch on them while harvesting. Others felt that occasional watch had to be kept. All the households trusted the forest association. Trust levels in Lekha are low due to conflicts in the village. Division in this village started with a religious festival, 10 years ago. However new conflicts in the village have erupted. Shoddy implementation of JFM rules by the field staff of the Forest Department has been the main reason. Unlike Lakhapur, people

in Lekha are not divided on the basis of caste and tribe. The divisions are between the Haves and Have-nots. The poor accuse the elite of cornering all the benefits from the forest and not contributing to the maintenance of the resource. The conflict is also between those who support the current JFMC and those who do not. Due to these ever increasing conflicts majority of people reported low levels of trust in their fellow villages. The executive body of the association is also not trusted as it is riddled with corruption and frauds. Low levels of trust can also be seen from the fact that majority of the households responded that they have to watch their fellow-villagers as they cannot trust that they will comply with rules. In case of Maral Mendha trust was the lowest among all the five villages. There is low trust among people and for the local institution governing the village. The members of the governing body of the *Gram Panchayat* are accused of corruption. Thefts and housebreaks were heard off only in this village.

7.5. Indicator 5: Reciprocity

Reciprocity is an important form of cognitive social capital as “communities in which norms of reciprocity is followed can more efficiently restrain opportunism and resolve problems of collective action” (Putnam 1993). Trust and reciprocity feed into each other. People who trust each other tend to help each other or reciprocate to each other’s needs and vice versa. That is why it should be expected that villages that have higher levels of trust also have higher levels of reciprocity. The scores of the five villages prove this point. Reciprocity can be judged by the fact whether people of the village take up various collective activities. In Saigata various activities were undertaken and coordinated by the leader in the past to develop reciprocity and trust in a community otherwise socially divided. However, slowly these kinds of activities in the village died down as the leader got busy in activities outside the village. But the norms of reciprocity developed in the past worked very well till the recent conflict in the village erupted. People in the village do take up collective activities now but in smaller groups. For tasks within the forest only collective monitoring and sanctioning is undertaken in a limited way. Only 30 percent of the households were of the opinion that people help each other voluntarily in case there is a death in a family or a marriage. However, in case of situation like exchanging patrolling duties or other forest related duties, 80 percent were ready to help their fellow-villagers.

In Mendha collective activities are a common feature and form a part of the tribal tradition. These activities, according to the villagers, not only help in keeping the unity of the village but are also a means to teach tribal traditions to the younger generation (Mehra 2006). There is voluntary help from all households in cash and kind in times of death or a marriage in a household, especially if it is a poor household. There are collective activities in smaller groups as well like collection and sale of honey, moha, awala (*Phyllanthus officinalis*), hirda (*Terminalia chebula*), beheda (*Terminalia bellerica*) and other minor forest products. Most of the forest activities like plantations, bamboo cutting, making fire lines are done on voluntary basis and collectively by the village. There is not only collective monitoring, sanctioning, and maintenance within the forest but outside too. All the households reported helping their fellow villagers in exchanging forest related or other duties in the village.

In case of Lekha and Lakhapur very limited collective activities take place at the village level although there are groups within the village who work together like women thrift groups. Although there is limited collective monitoring and sanctioning in tasks within and outside the forest, there are no activities like cooperative harvesting, processing, selling of forest products that are undertaken collectively. 40 percent of the households in Lakhapur responded that they help another household only when asked for help and 30 percent in Lekha said they help only a select few in the village.

People were ready to exchange each other's duties only if they got paid for it. Reciprocity in Maral Mendha was the lowest as 90 percent of the villagers said that there is no help to each other in times of financial crisis.

7.6. Indicator 6: Shared understanding and clarity about purpose of collective action

People's shared understanding about the resource often triggers its conservation. It is felt or perceived scarcity and its important role in the subsistence and livelihood of the people that can become reasons that often bring people together to collectively work towards its conservation. The more people are clear and aware of the benefits of forests, rules and norms, trust, and reciprocity, the more likely they will be willing to continue and invest in a set-up that ensures a continued flow of goods and services from the forest. This indicator also included direct questions to people about existence of social capital and the benefits, if any. It was found that people's perception about the level of social capital in their villages was consistent with what was found indirectly through other indicators of social capital. As consistent with the other indicators Mendha scored the highest on this indicator too. Majority of the households in Mendha and Saigata share common understanding about the need of forest conservation. 90 percent people in Mendha can see the benefits of trust and reciprocity in terms of forest conservation, thus better subsistence and livelihood, peace of mind as less conflicts, self-sufficiency of the village in all aspects of life due to a reciprocal way of life, and a helpful community that provides safety net to each other specially the poor.

Views of most of the households in Saigata of the advantages of the existing and past level of social capital in forest conservation was aptly echoed by a respondent. He said "if we had not cooperated with each other, we would have lost the forest. There would have been no fuel wood. We cannot afford substitutes like LPG stoves. Additionally we would have suffered like people of Maral Mendha - sneaking like thieves in other village forest. Our women would have suffered as they would have to carry head loads of wood from far". In Lakhapur most of the people acknowledged the fact that whatever limited cooperation and consensus is there in the village, it is restricted to forest conservation. In a guarded way they credit the past role of social capital in forest protection and conservation which has given them economic benefits in terms of free products for subsistence and livelihood. Even though the forest association and its rules work on the dictates of a dominant group in the village, the need for forest prompts the others to cooperate with this group.

People in Lekha spoke about the role of social capital (or lack of it) in not only forest management but also their social life. Most of the people admitted to low levels of social capital in forest protection as well as the other aspects of village life. As one resident of Lekha remarked "we don't trust each other. There are conflicts in the community. As a result outsiders take advantage. If we cooperated with each other we did not have to pay for labour wages. We could have helped each other in each other's fields. Now we have to hire people and so many times labour from outside charge higher wages". As another opinion was expressed "one thought' leads to development. We cannot get roads due to lack of unity. No schemes are successful, as we are not united. One example of loss is the lack of effective conflict resolving mechanism in the village. As a result we have to go to the police who take full advantage of us. Each fighting party has to bribe them. If we had unity this would have not happened". There were people in Maral Mendha who felt that having no forest is not a loss, but there were others who did recognize the role forests and how lack of unity is

affecting the village life. There were those who said that they had to buy things which could have been supplied free if they had a forest. There were those who commented that people are in constant conflict with each other. As a result the visits by the police to the village is a regular feature. “We loose are dignity”, states an old barber of the village. There were those who said that they have to migrate for work as there is no work created within the village. As a resident of Maral Mendha remarked “we are already paying a cost of lack of unity. We have to buy everything as there is no forest. We cannot have livestock, as there is no fodder. So we have to rent them out and pay. We also pay for the constant conflicts in the village”.

8. CHANGES IN SOCIAL CAPITAL AND FACTORS AFFECTING CHANGE

Change in social capital was observed in all the villages. There has been an over all improvement in social capital in Mendha, while social capital has declined in Saigata and Lakhapur. In Lekha there has been a positive trend simply because of initiation of structural social capital during the revisit period (see Table 5 below). Unlike the previous section, a village-wise analysis of the changes in social capital in presented in this section mainly in order bring out the factors that contributed to these changes in each village.

Table 5: Performance matrix: Changes in social capital in five years

INDICATORS	Maximum possible scores	Saigata		Lakhapur		Maral Mendha		Mendha		Lekha	
		2000	2005	2000	2005	2000	2005	2000	2005	2000	2005
<i>Existence and functioning of forest institution</i>	30	24.5	21	19	18	0	0	25	26.5	0	13.5
<i>Conflict Resolution Mechanism</i>	30	30	25	27.5	25	19.5	19.5	30	30	22	21.5
<i>Infractions And Penalties</i>	30	28	27	29	27	0	0	30	29	0	20
<i>Trust</i>	30	28	20	25	19	7	7	28	28	11	18
<i>Reciprocity</i>	30	17	11.5	7.5	5.5	1	1	18	21	2.5	6.5
<i>Shared understanding and clarity about purpose of collective action</i>	30	26	26	19	19	0	0	30	30	13	13
	180	153.5	130.5	127	113.5	27.5	27.5	161	164.5	48.5	92.5

Structural social capital in **Mendha** has improved as the local forest association has scored better than what it was five years ago in terms of increased activities of the association as well as incorporation of more restrictions in the rule structure. The successful experiment in social capital in forest management is now extended to the other natural resources like water, where a water association has been set-up in the past five years to manage water for irrigation. In terms of reciprocity people are now more confident of each other and each other’s intentions as a result they are investing more in collective activities than before. This is not only in tasks within the forest but outside the forest too. This constant investment is helping them maintain trust. There have been conflicts in the past five years, but they have been democratically and amicable resolved. The conflict resolving mechanism also remains as effective as before. There has been a fractional increase in infractions. This could be a downside of increased commercialization of minor forest products. But compliance to penalties imposed remains adhered to. People have been stopped from

breaking rules knowing that if such activities are not checked it is likely that it will change the cost and benefit ratio in a community creating a rift or increased infraction from others too.

An increased role of social capital in Mendha can be attributed to factors that are working simultaneous in Mendha. This has been leadership - both internal and external, a common culture, various traditional collective activities, importance to consensus and unanimity in decisions, fairness and transparency in dealings with community issues and assets, traditional norms of trust and reciprocity maintained through a well-developed traditional system of conflict resolution and social sanctions. Leadership is playing an important role in facilitating the growth of social capital and helping it expand in management of other community resources. In Mendha internal leadership has been ably provided by a local resident and the local priest (who is also the Police *Patil*). Other than them people from other households are also handed leading responsibilities so that people learn to speak publicly and handle responsibilities. It is for this reason that leadership is not restricted to the local leader and the police *patil*. Local leaders are ably supported in their efforts by a NGO which has been working with this community for some time now. The community gets constant guidance from the NGO in aspects like dealing with outside agencies. It has also helped popularize the efforts of the community through various articles in newspapers, magazines, and by encouraging researchers to take up Mendha as a study. The community has been open in its approach to adopt modern techniques and ideas. Financial and technical support from the Forest Department and NGOs is helping them adopt modern practices and rules that supplement traditional practices of forest conservation.

Decline in social capital in **Saigata** on the first indicator has been due to irregularity of executive and general body meetings, which were regular in year 2000. It has also scored lower in year 2005 on the attendance factor in these meetings. This has changed from “almost all members attend” to “half the members attend”. The conflict in the community and an ineffective conflict resolving mechanism are mainly responsible for it. The association has also become less active than what it was five years ago. Plantations and collective sale of forest products are no longer carried out. Similarly, five years later not all members find the rules fair, specially the community level cost-sharing mechanism, which was progressive in nature, five years ago. The poor households contributed less and rich contributed more. Contributions were decided as per the landholding of each household. The contributions have now been made equal irrespective of the economic status. Decline in effectiveness of conflict resolving mechanism is responsible for the lower performance of the village on the second indicator. Earlier, external authorities were not called in the village to solve disputes as the community managed it internally. However, this has changed due to the split in the community. In case of the third indicator, changes are seen in the compliance of rules of forest use. These have changed from “yes, almost always” to “most of the time”. In case of trust there has been a decline as the level of conflicts have increased in the village in the past five years and are disruptive upon occasions.

In Saigata, changes in some of the elements of social capital have contributed to a decline in over all social capital, like declined effectiveness of conflict resolving mechanism and changes in rules of cost-sharing. Most importantly the changing role of leadership in the community has affected the levels of social capital. Social capital in Saigata was built largely by the extra ordinary efforts of the local leader. This community had no past experience of collective action and was socially

heterogeneous. But his efforts overcame these, which otherwise would have been a Herculean task in a community with varied interests towards forest conservation as well as a community divided on basis of caste. He is still the informal leader of the village. People follow his instructions, as he is the most informed and active person of the village. However, there seems to be some weakening in his leadership. In these five years he has got involved in activities outside the village. These activities have although brought him a lot of recognition, they have kept him away from the village most of the time. This has caused a vacuum in the leadership position as there is no one in the village who possesses his leadership qualities to fill it. He has failed to train anyone from the village to take the reins. Additionally, now there is some discontent brewing in the village against him. He is being blamed for keeping his interests above that of the community's. The leadership position could have been handled by the elected members of the governing body, but its way of functioning is only adding to the mistrust. With lower involvement of leader in maintenance of social capital in the community and no second line of leadership, collective action in Saigata seems to be losing its grip. However, stock of social capital built in the past still remains to some extent which reflects in the score of the village when compared to Lakhapur and Lekha.

Lakhapur forest association has also seen some changes in both cognitive and structural social capital in these five years. Some of the restrictions on forest use that existed earlier no longer exist. For example restriction on sale of timber no longer exists. Similarly, the activities of the forest association have also declined, although fractionally. There is change in perception too about the rules specially the cost-sharing mechanism that some household do not find fair. Lack of women's participation in forest management remains the same. Reciprocity has gone down in terms of both tasks within the forest and outside the forest. Cooperative harvesting that existed five years ago is no longer practiced. There is negligent reciprocity on tasks outside the forest. Trust in the village has also gone down due to increased conflict within the community, which tends to get disruptive stalling all normal activities. Internal conflicts in the forest association that did not exist five years ago have sneaked into the forest association but have not taken large proportions. Conflict resolving mechanism has also weakened in the village as external authorities have to be called out to sort internal conflicts. Five years ago this was not a rampant problem. There has been a decline in compliance to rules and penalties and as a result the village has scored lower on this indicator than what it was five years ago.

Social capital was not strong in **Lakhapur** when the first study was undertaken. Collective action was a partial success (Ghate 2004). One of the factors that contributed to this partial success was the strong and defiant homogeneity in perception about 'forest protection without government help'. This homogeneity was mainly influenced by the external leader whose preachings were followed as 'word of god' by a larger part of the population of Lakhapur then. A common ideology helped bring the community together to a large extent. However, failure of this leader to sort out certain basic issues of the villagers in the past as well as during the revisit period has weakened his following in the community. Thus, the social and political divisions in the community that were bridged to some extent by the external leader through his ideologies, have widened. This means that there is now a wider division too between those who follow his teachings and those who do not. However, people still share a common and positive perception about the forest.

Lekha has shown an improvement, but this positive trend is different from what is seen in Mendha. Lekha had no social capital in terms of forest conservation five years ago as there was no forest association, no rules of forest use, etc. Thus saying that social capital has increased will be only half the truth, because the comparison between two points of time will be comparing 0 with a number. Thus question of compliance, penalties, participation, did not arise when there was no forest association or rules of forest use. This has changed in these five years. Structural social capital has formed but is finding it difficult to build. The conflict resolving mechanism that existed five years ago has become weak. Earlier conflicts were resolved by the whole village without any help from external authorities. However that has changed and external authorities are approached often. It is the decline in its effectiveness that has led to lower performance over the revisit period. In terms of cognitive social capital performance of the village has actually declined. It however shows increase in reciprocity simply because people are now involved collectively to some extent in forest related activities, like monitoring, sanctioning, and maintenance. There was no forest association earlier to prompt such an action. However this has not led to increase in trust as in these dealings people have seen no benefits from each other. Conflicts have gone up. Internal conflicts in the association have erupted and have increased since its inception. It is for these reason levels of trust have gone down in the village. Even though the scores of the village on this indicator show a positive change, that is, an increase in trust, this is not the reality. This positive trend is only because of non-applicability of some questions in year 2000 as there was no forest association then. Thus it is only for technical reasons that Lekha shows a positive trend on this indicator. People don't feel that the cost and benefits of forest conservation are being equitably distributed among all the households of the village, leading to lower compliance of rules. In fact after the formation of the forest association conflicts have only increased due to increased struggle for power between groups in the village. Social capital is still at very early stages and is finding hard to build in Lekha due to divisions in the village. It is a heterogeneous community like Saigata and Lakhapur. But there is no effective leadership here to overcome this heterogeneity. They have no tradition or past experience of collective action either. The leadership that could have been provided by the governing body members of the local forest association is missing. Infact, its corrupt ways of functioning is nullifying the positive external influences, that initially prompted forest conservation in the village. Irresponsible actions by the field staff of forest department has also added to conflicts in the village.

In **Maral Mendha** there is a status-quo. Like Lakhapur, a group dominates the village. But unlike Lakhapur this dominant group happens to consist of the elite of the village who are mostly responsible for the encroachments on forestland. They dominate all the important associations in the village like the Farmers-cooperative society, the water distribution association, and the *Gram Panchayat*. The poor on the other hand are keen to have a forest in order to reduce their daily drudgery of collecting forest products from the neighbouring forests as well as earn a living by selling minor forest products. As a result there are conflicting interests in the village. But those who want forest do not have the power and thus no say. As a result, there is no social capital in forest conservation and low in other activities. In fact encroachments have increased in the village over these five years and attempts by the forest department to forest the degraded forestland have been lost to these encroachments.

9. CONCLUSIONS: LESSONS LEARNT

Social capital plays an important role in resource conservation. It is the presence of rules of resource use, mechanisms of benefit and cost sharing, conflict resolutions when supplemented by values like trust and reciprocity that make the role of social capital effective. However, differing levels of social capital as well as temporal difference in performance of social capital can be found between communities. As in the traditional community in the study where social capital was converted from a traditional 'stock' to current 'flow', collective effort has moved beyond forest conservation to management of other resources over a period of time. In non-traditional communities, where social capital was built afresh by factors like local leadership, the growth of social capital was found to be inconsistent. It was also found that existence of stock of social capital, recently built or historically gained, is important to get flow of goods and services. And not just traditional communities, who are known to have a historical stock of social capital in the form of traditional institutions and knowledge, can revive social capital but non-traditional and heterogeneous communities can build it too by developing common understanding. However, over a period of time there is higher probability of consistent growth of social capital in communities with a pre-existent historical/cultural stock of the capital than communities that have built the capital recently. But, existence of stock of social capital, whether historically available or developed in recent past, is important. And if efforts are not made to constantly invest in the existing stock then the capital can start to give diminishing returns over a period of time as has been the case of Saigata. Thus, mere existence of stock is not enough. Efforts have to be made to convert it into flow and external agencies can help utilize this stock productively with positive returns (Krishan 2002).

The process of building of stock of social capital and its behaviour over time is affected by the presence or absence of internal and external factors like role of NGOs, role of forest department, effective institutional rules and mechanisms especially conflict resolving and locally defined 'fair' cost-sharing mechanisms, resource scarcity, and effective leadership. Leaders can play an important role in initiating cooperation as well as resolving conflict (Bardhan 1993), thus playing a role at all stages of evolution of social capital. Because where tradition of social ties and cohesion do not exist there local leadership can help develop these ties. But this can be effectively done if the leader is transparent and fair in his/her dealings. In traditional/tribal communities' leadership is naturally accepted, as it is part of their culture. But traditional backing is not enough, as the ability of the leader to build and maintain social capital is also important. In non-traditional communities with no tradition of leadership, it is purely the natural and developed abilities of the leader that can help build social capital. Part of their abilities are the methods adopted by them to build and maintain cooperation. This was one of the reasons of difference in social capital in Mendha, Saigata, and Lakhapur. Even though the changing role of respective leaders of Saigata and Lakhapur is negatively affecting the social capital in both communities, social capital is higher in Saigata as compared to an equally heterogeneous community like Lakhapur. This is mainly because the leader in Saigata used methods that aimed at developing norms of voluntary participation and a strong sense of common understanding. However, the leader of Lakhapur mostly used religious dictates and taboos. Additionally, he did not share the initial struggle that people of Lakhapur community had to go through in terms of forest conservation which the leader of Saigata did, which made his ideas and methods more appealing. Comparatively, leadership in Mendha (which was also internal) never restricted the role of building and maintaining social capital to itself and passed on responsibilities to others in the community. Adoption of such a method in Saigata and even Lakhapur would have helped to invest further in the capital. Hence, variations in external and internal factors explain the

differences in levels of social capital in different communities. The absence of these sources of social capital in some communities explains the inertia in them to undertake resource conservation.

These differing levels of social capital indicate communities have different capabilities to organize themselves as well as the ability to maintain this organization over a period of time. Therefore, it is important to understand and treat these differences in the current decentralization set-up. Unfortunately, JFM as a program despite its evolutions and changes is focused more on target achievement of establishing JFMCs (SHODH 2005, 2006a, 2006b). But, mere establishment of JFM institutions and expecting it to work successfully on its own would be naïve. It has to be backed by community level collective effort. However, that takes effort to build and local communities would not automatically or spontaneously organize themselves in collective action (Heltberg 2001). While some communities are capable of doing so on their own (Ghate 2004, 2003, D'silva and Pai 2003), there are others who require help. Even those who can build it on their own would still require coordinated and constant efforts of internal and external agencies in a co-management set-up like JFM to maintain it over a period of time (Ghate and Mehra 2004). However, the first step in this direction should be recognition of difference in the organizational capacities of communities, which can help in tailoring the interventions required in different communities. There are traditional communities like Mendha that already have a stock of the capital in the forms of traditional knowledge, practices, and institutions, and norms of reciprocity and trust which is either lying dormant or has got ignored or disrupted by the formal forest management set-up. Identifying, reviving, and incorporating these in the Joint Forest Management institution will help in higher acceptance and sustenance of JFM at the community level. There are also non-traditional communities like Saigata and Lakhapur that have developed this capital on their own in the recent past but are struggling to maintain it. Positive intervention and inputs from external agencies (like the forest department or local NGOs) can be helpful in reversing the process. However, the bigger challenge is communities like Lekha and Maral Mendha who are dependent on the resource but have negligent or low social capital to manage it. NGOs and committed forest officials can help build awareness in such communities about forest protection, help participation of people, increase level of equality in decision-making, transparency in dealings of the local institutions, and development of internal leadership. This is especially helpful during the formative years of any forest protection institution. However, it is equally important to develop leadership and JFM program related capacities of the ground level staff of the forest department who are the connection between the forest department and local communities. Proper implementation of the program is important for ensuring its sustenance as well the level of cooperation in local communities and this can be achieved if the ground level staff of the forest department is clear about the provisions of the program. Additionally, able leadership provided by them can be an important source of social capital in communities that lack the internal factors for building it.

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