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Social Capital and NGO actions in India

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The Case of Selected Villages in Gulbarga

– Minor Field Study and Master's Degree Thesis in Economics –

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Preface

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Abstract

In this master's thesis a field study on social capital in five rural villages in Karnataka, India, is presented. The main objective is to demonstrate what effect a local NGO has on the villages in terms of social capital and the capacity to carry out collective actions in order to boost production. This is accomplished by scrutinizing earlier activities of MYRADA, the local NGO, and by interviewing village members, village leaders, and NGO personnel to elucidate perceptions of collective actions, productivity, trust, networking, and social capital in general.

According to the analysis it seems that the selected villages lack structural social capital, which leaves them too passive to take independent actions towards increased production. However, when an external agent, in this case the local NGO, provides an input of structural social capital, mutual cooperation and production increase.

Contents

Chapter		Page
1.	Introduction	1
1.1	Background information	1
1.2	Objective of the study	2
1.3	Methodology	3
1.4	Organization of the paper	3
		3
2.	Review of literature on social capital	3
2.1	Definition/concept of social capital	4
2.2	Development of social capital	5
2.3	The importance of social capital for economic performance	6
2.4	Social capital and economic performance on three levels	7
2.5	Problems of externalities	8
2.6	Substitution and complementarity between formal and informal social capital.	8
2.7	Conclusion	9
3.	Measuring social capital	10
3.1	Conceptual framework of the SCAT	11
3.2	Selection of study areas, sample households, specific issues, and questionnaires	12
4.	Analysis of results	14
4.1	Community analysis	
4.2	Organizational analysis – MYRADA actions	18
4.3	Household analysis – trust, rules, and norms	26
5.	Social capital and collective action	31
5.1	How the villages differ in terms of community characteristics	
5.2	How the villages differ in terms of social capital	
5.3	Evaluation of the MYRADA actions and how the villages differ in terms of collective action	32
5.4	How social capital and collective actions vary according to the characteristics of the communities.	33
6.	Main findings	33
	Bibliography	35
	Annexes 1-6	38-47

1. Introduction

From a social capital perspective virtually all forms of traditional culture – social groups like tribes, clans, village associations, religious sects, and similar self-contained units – are based on shared norms, perspectives, and behavior, which yield cooperation. Modern societies, by contrast, consist of a large number of overlapping social groups that permit multiple memberships and identities. Traditional societies, like rural India, seem to have better access to social capital within small social units, but have fewer opportunities for multiple memberships, thereby passing on information, innovation, and human resources less easily outside these constrained social units, likely resulting in a slower growth of production (Fukuyama, 1999, pp. 4-5). A social capital study of the Indian countryside in Karnataka could illuminate this problem and investigate how the poor and excluded would be aided by increasing their access to social capital via extensive NGO actions.

1.1 Background information

Karnataka, sited in the South-West of the country, was founded in 1956 and is one of the 29 states in India. It is placed at the middle of the ladder of socioeconomic development in India, but faces a vast asymmetry regarding human development and gender inequality. For instance the Bidar, Gulbarga, and Raichur districts of Karnataka occupy very low ranks in human development, reflecting low standards of health, living, and education.

A number of factors have contributed to this situation in Gulbarga ¹:

- Historical power structures (stretching to the time of the British Empire) have affected present institutional structures.
- Ineffective social and institutional mechanisms, incapable of spurring growth.
- Low levels of investment in social and economic sectors.
- Misfunctioning civil society institutions.

The religion and caste system have a significant role, being a main determinant of the social, economic, and political structures (formal and informal). Karnataka is a multi-caste region, where the Hindus and Muslims form two main ethnic groups, with an almost non-existent interaction between these two. Dominant caste groups have shaped institutions in

¹ The description of Gulbarga district is largely built on information obtained from Professor Degaonkar at Gulbarga University.

land and labor markets, influencing formal and informal political power structures. The lowest castes are socially excluded, with little or no political or economic power.

Some of the excluded groups are aided via targeted policy actions and NGO (Non-Governmental Organization) activities that promote collective actions, which in turn increase the level of social capital. The increase of social capital could improve their access to goods, services, information, technology, and to power structures. A number of NGOs (73) are operating in Gulbarga district. MYRADA (Mysore Relief And Development Agency) is by far the largest, and for almost two decades has developed social capital through informal organizations of the poor and low castes (Fernandez and Mascarenhas, 2000, pp.152-156). In Gulbarga, MYRADA is actively building up credit institutions, watershed management and development of off-farm enterprises that are available to the poor.

1.2 Objective of the study

General goal: This study will demonstrate how NGO activities affect social capital in five selected villages.

Specific goals: (i) As we have hitherto seen, institutional capacity is lacking in Gulbarga. NGOs, specifically MYRADA, support the lowest caste groups and the poorest via actions for developing social capital and institutions (see ch.4.2). A first aim is thus to study MYRADAs program for the poor. (ii) A scrutiny of social capital in selected villages in Gulbarga is conducted in this work, and the results are related to earlier MYRADA efforts for collective actions. The second aim is hence to investigate how social capital has been linked to MYRADA's success or failure in reducing poverty in selected villages.

The main purpose of the field work *per se* is to distinguish how social capital is related to community characteristics (education, ethnic composition, occupational pattern, and gender profile) in five rural villages in Gulbarga district, assuming that certain NGO activities spur MBCAs (Mutual Beneficial Collective Action) that in turn increase social capital and reduce poverty. The crucial question is thus: How do social capital and collective actions vary according to the characteristics of the community and NGOs (specifically MYRADA)?

1.3 Methodology

This study integrates quantitative and qualitative methodologies, the quantitative research consisting of a review of research literature (see ch.2), and the qualitative research undergoing a field study (see ch.4 and 5). However, macrolevel indicators of social capital will not be measured. Instead, the focal point is structural (and some cognitive) social capital at the microlevel and how these types of social capital interact at the community (village) and institutional levels. Social capital will be measured by interviewing selected administrative personnel in vital institutions (particularly MYRADA), and farmers and village leaders in the rural countryside ².

Survey data has a number of weaknesses, of course. For example, responses will vary according to the way the question is phrased and the person asking it. But recent research has shown that this method can successfully be used as a complement to quantitative economic data in poverty assessments: Pena and Lindo-Fuentes (1998), Krishna and Uphoff (1999), and Mello (2000) have independently and successfully combined quantitative and qualitative data, using survey data and/or participatory methods when measuring social capital.

1.4 Organization of the paper

The second chapter sheds light on recent research findings on social capital and its effect on economic performance, illuminates how social capital is generated (presenting a Prisoner's Dilemma scenario), distinguishes between different types of social capital in traditional vs. modern societies, yields a concept/definition of social capital, and presents a framework for measuring social capital in a fieldwork. In the third chapter field work tools and a concrete plan for measurement are elaborated. The fourth chapter yields an analysis of the data collection and field work by focusing on three levels: community (village), organizational (NGOs), and household levels.

2. Review of literature on social capital

The field of social capital is in its infancy and contains a plethora of concepts and viewpoints. But there seem to be some similar standpoints among researchers, for example that social capital is a vital determinant of economic growth in the sense that it breeds cooperation and reduces transaction costs. A presentation of some research findings may illuminate things a bit and provide a preparation for forthcoming analysis.

2.1 Definition/concept of social capital

The concept of social capital lacks uniform measurement methods among social capital researchers. This is reflected in the absence of a coherent definition of social capital. Since it may be impossible to construct a uniform definition of social capital (see arguments below) I will instead elaborate a concept that accepts the dynamic characteristics of social capital and is not a rigid definition.

The oft-quoted view of Putnam (1993) states that social capital is a multidimensional concept, broadly defined as norms, trust, and networks that foster cooperation in a society. It involves interpersonal trust, social cohesiveness, and associational engagements among social groups. Fukuyama (2000, p.3) defines social capital as informal norms that promote cooperation between two or more individuals. To highlight another common definition of social capital, Knack (1999, ch.1) suggests that social capital is the trust and norms of civic cooperation that are essential to well-functioning societies (and the economic progress of these societies).

The unclear definitions hitherto presented in the literature on social capital indicate that a more concrete concept of social capital needs to be elaborated. Still, social capital must not be constrained to a static definition, because the essence of what is called “social capital” constantly varies according to time, culture, people, language, and the like (Grootaert and van Bastelar, 2001, pp.7-8), and the definition of social capital should therefore be specific to every single study. This should imply that measuring the social capital of the indigenous tribes in Bali would require one specific definition of social capital, while a study on the suburban youth in New York would require another definition of social capital in order to capture accurate measurement results. Therefore, a dynamic concept of social capital

(rather than a definition) is required for this study, yielding a specific concept of social capital.

Two broad approaches have been taken in this field of research. The first has been to measure the number of groups and group memberships in a given society, and the second has been to use survey data on levels of trust and civic engagement (Fukuyama, 1999, p.9). The second approach has been adopted in this study.

One concept of social capital, fetched from the study “Mapping and Measuring Social Capital” (Krishna and Uphoff, 1999) goes in tandem with the second approach. It also goes in parity with the ideas elaborated in this study, which motivates a presentation of it:

”We propose that there are two main kinds or categories of social capital: *structural* forms, and *cognitive* forms. Both pertain to and affect social relationships and interaction and both affect and are affected by expectations. The first category facilitates MBCA [Mutual Beneficial Collective Action] through established *roles* and *social networks* supplemented by *rules*, *procedures* and *precedents*, while the second predisposes people toward MBCA on the basis of shared *norms*, *values*, *attitudes* and *beliefs*. (...) The first form of social capital is *external* in that it can be observed and can be modified directly, while the second form is *internal*, residing within people’s heads, not easily changed. (Krishna and Uphoff, 1999, pp.6-7).

Both structural and cognitive social capital can be regarded as a type of capital, because they require some *investment* of time and effort.

This concept is less vague than many other descriptions of social capital. Still, it does not deny the dynamic quality of social capital. As mentioned, this study will largely consult the quotation above in the forthcoming analysis.

2.2 Development of social capital

Let us now investigate how social capital has developed and accumulated over time by applying a Prisoner's Dilemma scenario.

If we regard social capital as informal norms that produce cooperation, there is a straightforward explanation of where it comes from: social capital arises as a product of iterated Prisoner’s Dilemma games. One round of a Prisoner’s Dilemma game does not lead to a cooperative outcome because defection ("cheating") constitutes a Nash equilibrium for

both players. If the game is repeated, however, a simple tit-for-tat strategy (playing cooperation for cooperation and defection for defection) leads to cooperation for both players. From a nongame standpoint, if individuals repeatedly interact with each other over time, they develop a reputation for trust, which facilitates growth of social capital (Fukuyama, 1999, p.13).

However, economists' approach to understanding the way social capital is generated is ultimately limited, because social capital is often produced by hierarchical sources of authority, which establish norms for seemingly a-rational reasons. Buddhism, Hinduism, Christianity, and Islam, or large cultural systems like Confucianism, are examples of this. Such norms are transmitted from one generation to the next through a process of socialization that involves more habit than reason (ibid.).

2.3 The importance of social capital for economic performance

One strand of literature investigates the links between social capital and economic growth (Rodrik, 1998; Temple and Johnson, 1998). It is argued that growth can be enhanced in countries where social and political institutions discourage rent-seeking behavior by increasing the level of social capital, which in turn lowers the transaction costs via contracts and bureaucratic rules, spurring growth. Knack (1999, pp.27-28) shows that increased trust between groups or individuals stimulates growth and production.

An extensive political science literature has focused on the relationship between social capital and public institutions (eg, Putnam; Frey, 1997; Fukuyama, 1999). Putnam's work (1995 and onwards) demonstrates that social capital-rich regions outperform their social capital-poor neighbors, even though funds were transferred to the latter to finance economic growth. Other studies have demonstrated that highly centralized institutions have created many inefficiencies due to the lack of social capital; decisions were delayed and information became distorted as they moved up and down the hierarchical ladder ³. However, different societies have diverse cultural capacities for institution building. Japan's acquisition of an economic planning agency with enormous power over credit allocation did not lead to the same levels of rent-seeking and corruption that similar

³ A decentralization would in this case create much flatter management structures, which in effect pushes responsibility down to the grass root level, increasing the level of social capital (Fukuyama, 2000).

agencies have yielded in Latin America and Africa (Fukuyama, 1999, pp.8-9). This suggests that some institutional reforms cannot be transformed to other societies lacking in social capital.

Further research has illuminated some more determinants of social capital. Glaeser et. al (1999) show that social capital is strongly linked to higher social status. Helliwell and Putnam (1999) indicate that educational attainment is associated with trust and political and social engagements. Social capital has also been shown to be affected by religion (Putnam, 1993; Fukuyama, 1999, p.14) and ethnic polarization (Knack and Keefer, 1997).

Allegedly, since social capital is probably the most intangible of all intangible assets, it tends to be consistently undervalued by markets because it is so difficult to measure (Fukuyama, 1999, p.13). But with respect to the arguments above, social capital is a vital means of production and development in the sense that it reduces transaction costs associated with coordination mechanisms like contracts, hierarchies, and bureaucratic rules. It is also conducive to cooperation between individuals within households, firms, institutions, communities, and nations.

2.4 Social capital and economic performance on three levels: (i) macro (ii) sectoral (iii) community.

As we have seen it seems that social capital affects growth on many levels, but roughly on three levels. Recent evidence (eg, Rodrik, 1998) shows that social capital has significance on a (i) macrolevel. If a nation faces high levels of institutional and political decentralization, has advanced legal systems, and a democratic and strong regime, a lot of social capital is nested in the nation and it will likely face a strong macroeconomy. Social capital may also be perceived on a (ii) sectoral level, eg by comparing the amount of social capital between a number of sectors, or investigating two identical firms within a sector, where the firm with abundant social capital should outperform the other firm. Social capital can also be constrained to a (iii) community level, which is the approach in this study. One or several communities may then be selected for scrutiny. A number of institutions and households or firms within these communities may be targeted, to indicate whether the community is rich in social capital. A richness in social capital would imply that collective actions are successful within institutions and households (or firms).

Successful collective actions thus hinges on how well functioning the networks are, whether the social norms are uniform, level of participation among all segments of the population, level of trust among the participants, and the like. Hence social capital can be distinguished on macro, sectoral, and community levels, and (as we will see in this study) the ability to carry out collective actions is often linked to the level of social capital.

2.5 Problems of externalities

Even though social capital is a vital determinant of growth, it may also have adverse effects that must be taken into consideration. For instance, social capital is a private good that is pervaded by both positive and negative externalities (Collier, 1998, p.21-22). An example of a positive externality is Puritanism's intent to treat everyone morally, not just members of the family. This tends to breed trust and stability in a society. On the contrary, many groups achieve internal cohesia at the cost of outsiders, who can be treated with suspicion, hostility, or outright hatred. The Mafia achieves cooperation based on shared norms and thus have social capital, but it also produces negative externalities for the society in which it is embedded (Fukuyama, 1999, pp3-4).

As a conclusion to what has hitherto been presented on research findings, recent literature indicates that uniform norms, trust, and reciprocity are main avenues to high levels of social capital. Social capital is also associated with efficient institutions, social status, education, religion, low transaction costs, functioning contracts, and property right agreements⁴. It is a vital determinant of development and growth on macro, sectoral, and community levels. However, under some circumstances social capital has adverse effects on a society, giving rise to negative externalities.

2.6 Substitution and complementarity between formal and informal social capital

Since social capital can be defined in terms of stock and flow of capital (see Krishna and Uphoff, 1999, pp.6-7) I would like to finish this chapter by developing an argument about substitution and complementarity between formal and informal social capital.

⁴ Ethnic and religious polarization, which is typical for India, has ambiguous effects on social capital, sometimes yielding instability and violence (see Colletta and Cullen, 2000), sometimes triggering reciprocity and peace (see Krishna and Uphoff, 1999).

As we have seen, in traditional societies the largest amount of social capital is nested in informal sectors, such as households, tribes, and rural villages. Modern societies, on the contrary, have developed a considerable amount of formal social capital via institution building, bureaucratization, and networking. Formal social capital has thus replaced informal social capital in the process of modernization.

But any economist can see that the formal social capital is sometimes lacking, eg institutions may be too inefficient or property right agreements are absent. In this case the informal social capital could fill in empty gaps, triggering a complementarity between formal and informal capital. For instance, a contract may not cover all contingencies, or institutions might face inefficient mechanisms. Then a mutual trust between individuals (informal social capital) can complement this shortcoming, creating well-functioning systems. In this way market failures can be corrected regarding credibility, education, health, community property rights, and the like, because people trust each other.

It thus seems that social capital, which can be regarded as a product of iterated Prisoner's Dilemma games, has accumulated and developed in the process of socialization. Race, religion, historical experience, and the like, build a normative consensus among people, thereby generating social capital. A consensus of rationality has been triggered in the process of globalization. The result is an emergence of modern societies where formal social capital largely has substituted informal social capital. However, since the formal social capital is sometimes lacking, informal social capital functions as a complement, strengthening institutions, contracts, households, and the like.

2.7 Conclusion

(i) According to recent research findings, social capital triggers production and economic growth by reducing transaction costs associated with coordination mechanisms like contracts, bureaucratic rules, networking, and contacts. (ii) Social capital can be distinguished on macro, sectoral, and community levels, and is often associated with social status, education, efficient institutions, religion, low transaction costs, and well functioning property right agreements. A high level of social capital goes in parity with a good ability to carry out collective actions. Successful collective actions, in turn, depend on the uniformity of social norms, efficiency of networks and contacts, level of participation among all segments of the population, and on trust among the participants.

(iii) Social capital may in some cases give rise to externality problems, which can be observed in religious conflicts, racism, and in similar closed internal cohesia that show loyalty to group members but express hostility to outsiders. (iv) Albeit social capital can sometimes be produced by a-rational reasons, the rationale for social capital can be proved economically by applying a Prisoner's Dilemma game, leading to cooperation for both players. (v) In modern societies formal social capital has largely substituted informal social capital, where informal social capital tends to function as a complement to the formal social capital. As we will see, in traditional societies, on the other hand, formal social capital tends to function as a complement to the abundant stocks of informal social capital (see ch.5.2 and 5.3).

(vi) One seemingly accepted concept of social capital that has been applied in studies on rural India divides social capital into structural and cognitive forms, where structural social capital facilitates collective actions via established rules and procedures within social networks, and cognitive social capital resides within people's minds as beliefs, values, and attitudes (Krishna and Uphoff, 1999, pp. 6-7).

3. Measuring social capital

Robert Putnam (1993) adopted a popular method for measuring social capital, attempting to measure social capital by counting groups in civil society, using a number n to track the size of memberships in sports clubs, bowling leagues, literary societies, political clubs, etc, as they varied over time and across different geographical regions. There are a large number of n 's in any given society, $n(1..t)$. Hence the first measure for the total social capital (SC) in a society is the sum of the membership of all groups: $SC = \text{Sum}(n(1..t))$. Thereafter some additional subjective factors are added to this basic model. To produce anything like a believable census of a society's total stock of social capital by applying this method should be difficult, since it involves multiplying large numbers that are either subjectively estimated or simply nonexistent.

The other method that has been used for measuring social capital goes via survey data collections. A number of data sources are useful here, such as the University of Michigan's World Values Survey (see <http://wvs.isr.umich.edu>) and the Social Capital Assessment

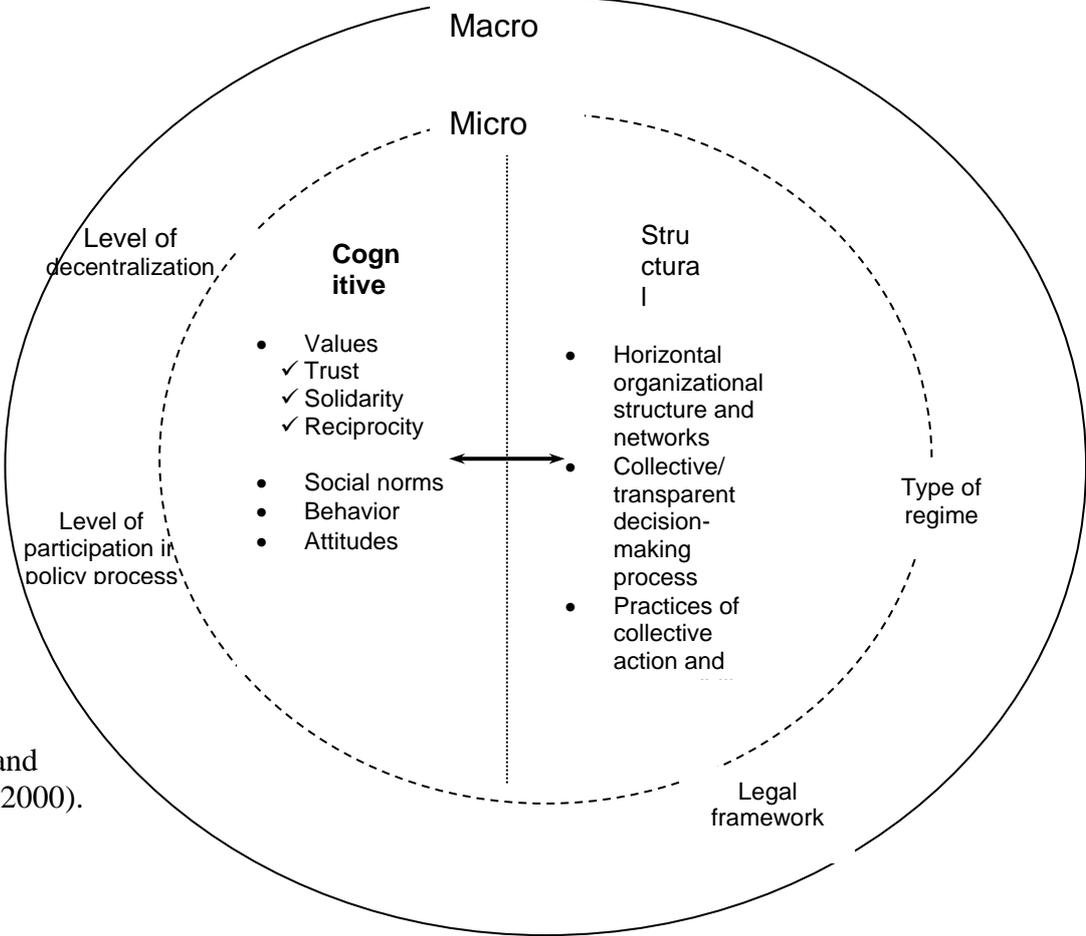
Tool (SCAT). In these kinds of surveys a series of questions are asked concerning trust, norms, civic engagement, etc., in various political and social institutions, as well as other questions associated with social capital. Since the ideas of SCAT have been adopted for this fieldwork, let us have a close look at it.

3.1 Conceptual framework of SCAT

The Social Capital Assessment Tool seeks to measure the level of social capital and its relationship to other development indicators in the areas of economic growth, poverty alleviation, and inequality reduction. SCAT assesses social capital in three areas, producing a Community Profile, a Household Survey, and an Organizational Profile (for a detailed description, see Krishna and Shrader, 2000, ch.2).

Social capital is roughly divided into two levels: the macro and the micro (see figure). The macrolevel refers to formal relationships, such as political regime, rules of law, legal frameworks, level of decentralization and level of participation in the policy formulation process. The microlevel refers to the contribution of horizontal organizations and social networks to development. As previously mentioned, two types of social capital can be distinguished on the microlevel: structural and cognitive.

Figure 2: Conceptual Framework – Levels and Types of Social Capital



Source:
Krishna and
Shrader (2000).

Structural social capital includes the composition and practices of institutions on the local level that are involved in the process of community development. Structural social capital consists of networks and horizontal organizations that breed collective decision-making processes, mutual responsibility, and practices of collective action. This study demonstrates that the local NGO (MYRADA) provides structural social capital to some rural villages, acting as an external agent of social capital by implementing rules and procedures for collective actions, thus creating a *structure* for collective action upon which social capital can be built. Cognitive social capital refers to values, beliefs, attitudes, behavior and social norms. This includes trust, solidarity, and reciprocity that in response to certain customs and traditions are shared among members of a community and create the conditions under which communities can work together for a common good. (Cognitive social capital specific to the five selected villages in this study will be scrutinized by elucidating values, beliefs, and levels of trust among rural villagers.)

Observe that structural and cognitive social capital are conceptually separated but in reality have a strong influence on each other. For example, the input of structural social capital provided by local NGOs affect people's values, attitudes, behavior, and levels of trust. Exactly how the people are affected will be demonstrated in ch.4.

3.2 Selection of study areas, sample households, specific issues, and questionnaires

Five villages were selected for scrutiny right before leaving for fieldwork (Okaly, Marimanchi, Kalmud, Dongrugaon, and Seevanagi). Shivakanth, an economics student who was brought up in the countryside in Karnataka, accompanied me during all field work sessions. One village leader and five households were questioned in each village. Every village was visited twice: On the first visit we introduced ourselves and interviewed the village leader, and on the second visit we probed the household questionnaire. Shivakanth interviewed in the local language and I took notes. However, I interviewed and taped MYRADA staff in English. Altogether we targeted three elements for scrutiny: MYRADA staff, village leaders, and households; and we collected data for measurement on three levels: institutional, community (village), and household levels, producing a Community Profile (ch. 4.1), an Organizational Profile (ch. 4.2), and a Household Survey (ch. 4.3).

Five questionnaires were constructed before leaving for Gulbarga. At the Department of Economics at Gulbarga University four questions on equity and female participation were added. Six questionnaires were thus used altogether (see Annexes 1-6). Questionnaire 3 was highlighted by interviewing MYRADA staff. Questionnaires 1-2 and 4-5 were completed by interviewing individual village leaders. Questionnaire 6, the household questionnaire, was probed by interviewing household members. One member per household responded to the questions. Observe that only females answered the household questions (with one exception), because the household interviews were conducted during the day, when the men were out at work.

The selection of households for examination was rather haphazard, since we could not know beforehand what household members would be available for interviews. The most available persons in each village were thus interviewed. This is negative in the sense of scientific reliability, because household members that tend to be present for interviews may give different responses in comparison to absent household members.

It is also important to notice that about a dozen of people followed the interviewing and added comments, which may have hindered the village leaders and household members from speaking with us in confidence. On the other hand, in this way we obtained viewpoints from the whole village rather than from one interviewee only.

The results are related to sociodemocratic characteristics like religion, caste, education, and social status on village and household levels. Subsequent to the interviews those organizational characteristics that are possible to quantify will be concluded in comparable indexes or answer sheets. The situation of the poor and excluded are given particular attention due to their urgent need for access to credits, technology, institutions, education, contacts, and social capital in general.

The fieldwork was already finished within a few weeks, due much to Shivakanth's efficiency and because our supervisor urged us to complete the work as soon as possible.

4. Analysis of results

First in this chapter, results from the interviews are highlighted, and second, a clear picture of the only type of MBCA that pertained in all five villages (watershed development) is elaborated; third, an analysis of the results is provided, drawing parallels to general social capital theories, and an answer to the specific objectives of this study, elaborated in ch.1.2, is given; in other words, to i) study MYRADA's program for the poor, ii) investigate how social capital has been linked to MYRADA's success or failure in reducing poverty, (iii) scrutinize the effects of MYRADA's previous actions, and answer the question "how do social capital and collective actions vary according to the characteristics of the communities and NGO?"

4.1 Community analysis

The following variables were selected for scrutiny on a community/village-level (for details, see Annex 1) :

Table 1: Community Profile

Village	Literacy	Caste#	Caste%	Educ	Heterogeneity			Age	Old/new
					Wealth	Caste			
Okaly	High school	5	60% (Lingayat)	1	1	3	1	1	
Marimanchi	Secondary	4	50% (Marata) ⁵	1	1	3	1	1	
Kalmud	Secondary	5	60% (Reddy)	1	1	3	1	1	
Dongrugaon	High school	4	60% (Lingayat)	1	1	2	1	1	
Seevanagi	High school	5	50% (Lingayat)	1	1	2	1	1	
<i>Share (%)</i>									
<i>of total no. of</i>									
<i>households</i>									
					<i>Not at all = 1</i>				
					<i>Somewhat = 2</i>				
					<i>Very much = 3</i>				

LITERACY: Level of literacy among the majority of village members.

(No education, Primary, Secondary, High School, Undergraduate, Graduate, Missing value)

CASTE#: The number of castes existing in the village.

CASTE%: The share of households belonging to the largest caste (in relation to the total number of households).

⁵ According to Shivakanth, Maratha is not really a caste, but a community which resides in Maharashtra (Bombay). There is a large number of Marathas residing in Karnataka and they have some different castes, like Somayaji, Kshatriya, Darjee (who performs stitching work on cloth), and also Rangaree in rural Kannada.

Heterogeneity: To what extent do the following differences tend to divide people in your village (Not at all=1, Somewhat=2, Very much=3 units):

EDUC: Differences in education?

WEALTH: Differences in wealth?

CASTE: Differences in caste?

AGE: Differences in age?

OLD/NEW: Differences between old inhabitants and new settlers?

The characteristics of the villages in terms of education, caste structure (caste plus subcaste), and heterogeneity are as follow:

Okaly: Although the village leaders provided us with rather diffuse information about the level of education among village members (no exact numbers were given) it is feasible to perceive that a majority of the Okaly-villagers have finished high school. Five different castes coexisted in the village, and the largest caste (Lingayat) constituted 60% of the households. Among the factors “level of education, landholdings, castedom (the caste system), age, and old vs. new village settler” only castedom separated village members from each other; the remaining variables had no importance at all.

Marimanchi: A majority of the Marimanchi villagers had finished secondary school: Four castes existed within the village, where the Marata caste accounted for 50% of the total number of village households. Only castedom strongly separated the people; other indicators had no importance at all.

Kalmud: A majority had finished secondary school. There were five castes within the village. 60% of the members belonged to the Reddy caste. Castedom significantly separated the villagers; other factors did not yield differences among the population.

Dongrugaon: A majority of the villagers had graduated from high school. Among four castes Lingayat accounted for 60% of the total number of households. Castedom somewhat (but not significantly) separated the people; other factors had no importance in this context.

Seevanagi: A majority of the villagers had enrolled and finished high school. Lingayats made up 50% of the total number of households within the village, in which five different castes coexisted. Only castedom somewhat separated village members.

To conclude, in all villages (Okaly, Dongrugaon, Seevanagi) a majority of the villagers had finished secondary school. The number of castes within each village range from 4-5, and the largest caste account for 50-70% of the total number of households. Among the factors education, wealth, castedom, age, and “new settler vs. old inhabitant”, castedom is the only factor that divides people in the villages. The dominant caste normally accounted for more than half of the households, which could mean that the dominant caste have a rather high degree of influence, yielding a consensus in the village and likely facilitating growth of social capital.

Collective actions: Number of development projects, number of collective actions, and relationship to administrative officials

This section illuminates to what degree a general propensity for MBCA, *without the influence of MYRADA*, prevails in the villages (for details, see Annex 2).

Community development projects:

The Dongrugaon village has implemented one project for land distribution among the poor. In the remaining villages none have started up any own common development projects.

Collective actions:

The Kalmud, Dongrugaon, and Seevanagi villages normally present a demand or need to a high administrative official or politician 3-6 times per year. The Okaly villagers contact an important village leader 4-5 times per year, who in turn approaches an administrator. Only the Marimanchi village has entirely neglected this type of collective action.

Relation to administrative officials:

The relation between villagers and administrative officials is “good” according to the village leader in all villages.

Table 2: General Propensity for Collective Actions

Village	COMM PROJ	COLL ACT	REL ADMIN
Okaly	0.	4-5 per year*	2.
Marimanchi	0.	0.	2.
Kalmud	0.	3-4 per year	2.
Dongrugaon	1.	5-6 per year	2.
Seevanagi	0.	4-5 per year	2.

**Go to important villager*

COMM PROJ (Community development projects): About how many community development projects (implemented by the villagers themselves, without MYRADA) have been completed during the last five years.

COLL ACT (Collective actions): About how many times villagers have collectively presented a demand or need to a high administrative official or politician during the last five years.

REL ADMIN (Relation to administrative officials)⁶: How good or bad the relationship between villagers and administrative officials is in the community (on a scale from 1-5, where 1 = excellent relationship).

In summary it seems that some villagers and political administrators have experienced a reciprocal interaction, although independent project implementation within the villages is very infrequent. Note that four of the five selected villages were involved in MYRADA watershed development only. One village (Dongrugaon) was in addition to watershed development also involved in a project to distribute land among the poor and low castes. This implies that all five villages almost exclusively have experienced only one major type of MBCA during the last five years: MYRADA watershed development. A description of MYRADA's watershed development in terms of collective action is provided below.

⁶ This question has relevance if assuming that a good relation to administrative officials encourages collective actions.

4.2 Organizational analysis – MYRADA actions

MYRADA is the largest external aid for the villages in terms of organized technical, financial, and administrative support for development activities. MYRADA has initiated a number of development projects in Gulbarga district (IISD, 1999, pp.2-3). From this viewpoint MYRADA may be a vital force in the context of social capital and development projects, and therefore needs closer scrutiny (for details, see Annex 3).

Table 3: MYRADA-specific Propensity for Collective Actions

NGO	INIT	TYPE	FREQ	PROD	SHARE	SATISF
MYRADA	More than 10	Watershed development	4 visits/month	100% increase in two years	25%	Highly satisfied

INIT: How many times the MYRADA staff altogether has initiated activities in all villages during the last two years.

TYPE: What type of activities MYRADA has initiated in the five villages.

FREQ: How frequently (times per month) MYRADA staff has visited each village during the last two years.

PROD: How much the quantity of produced fodder has increased as a direct result of the initiation.

SHARE: What share (in percent) of total costs villagers would be ready to contribute to a new MYRADA project.

SATISF: Degree of satisfaction among the villagers regarding MYRADA's recent activities (on a scale from 1-5, where 1=strongly satisfied).

MYRADA has been involved in development projects such as watershed development, microcredits, and off-farm enterprises. Again, in the five villages that were selected for fieldwork, MYRADA has initiated *only* watershed development activities. MYRADA staff on average visited each village four times per month. The MYRADA organization pays 75% and the villages 25% of the watershed development costs. It takes about two years to fully reap the benefits of a MYRADA watershed development program. During this two year span the productivity is on average doubled which, according to MYRADA staff, leaves the villagers highly satisfied with the project.

Watershed development: The only common MBCA (Mutual Beneficial Collective Action):

Since collective development actions have been so lax within the selected villages (see ch.4.2), but intense when supported by MYRADA (see ch.4.3), the only common denominator of collective action is watershed development activity. Let us thus have a look at this type of collective action ⁷.

Definition and basic principles of watershed management

Watershed management is defined as:

“...the integration of technologies and social strategies within the natural boundaries of a drainage area for optimum development of land, water, and plant resources to meet the basic needs of the people and animals in a sustainable manner. Through training, financial support and the strength of their own people’s institutions, the people are empowered to take up activities and strategies necessary to solve the problems they face.” (Udachan, 2001, p.11)

There are three general principles of watershed management:

Sustainability: The need for a long-term, sustainable goal should be reached by acting for a sustained productivity among small and marginal farmers. For example should the ground water recharge is to be improved, investments in protective irrigation must increase, and the regeneration of lands – fuel, fodder, fruits, and flowers – must continuously improve. In the context of social capital, the skills among local farmers to trap soil and water without external help must be improved. The villagers themselves should extend the management until it covers all lands. An ability to respond to various demands in watershed management is necessary. This could be accomplished by building well functioning institutions and spurring an ability to solve conflicts, which would add to a higher productivity.

Productivity: Increased productivity is the second principle of watershed management. Increased productivity is a result of successful treatment and sustainability activities.

Equity: Every sentiment of the people (eg, small and marginal farmers, landless, tribal, and women) has to be involved in the watershed management. Everyone should have access to

⁷ In order to analyse the social capital that has been involved in MYRADA watershed activities it is necessary to first study and understand the procedures of watershed management and its connections to social capital. Thus, by analyzing the successes and failures of watershed management in different villages we can at a later stage relate it to the level of social capital.

credit and biomass. The watershed management is designed in such a manner that the vulnerable groups and women are involved to the maximum (Udachan, 2001, ch.3).

Major objectives of watershed management, specifically in the context of social capital are: To improve village farming systems by analyzing the interconnection between individual farming systems with community production systems. To upgrade livestock. To generate employment opportunities for the underprivileged rural population (eg small, landless, and marginal farmers) by establishing specialized activities like bee keeping, dairy farming, and cottage industries. To stimulate and promote farmer's participation in watershed development project planning, implementation, and evaluation of project assets. To involve women in watershed activities. It thus seems that a lot of collective actions are involved within watershed management.

The procedure of watershed development activities

The process to achieve these principles of watershed management takes about two years. During the *first phase* (0-6 months) MYRADA staff make a first visit to the village; they call for a grand meeting and establish relationships with people. During the *second phase* (month 6-9), MYRADA establishes the concept of watershed management, regular meetings are held on a weekly basis, a discussion group is formed, and financial operations like savings and interloaning are conducted. During the *third phase* (month 9-12), activities are planned in more detail. A grand meeting is conducted, where the action plans, budget questions, basis of payments, employment opportunities, and equity issues are highlighted. A system to monitor the works is also initiated. The *implementation phase* (13 months onwards) is characterized by regular meetings and presenting of the work progress. For instance, the works are monitored in terms of quality, quantity, and payment. Sanctions for violations of agreements are imposed and opportunities to the landless, women, and poor are provided. Technical support, guidance, and further financial assistance are significant for this phase. During the *final withdrawal phase*, MYRADA's role gradually decreases. The villagers are linked to line departments, private institutions, financial institutions, governments, etc, and follow up actions are taken. It is expected that the villagers can function without external help from MYRADA at this stage.

The types of technical treatments to tackle problems with an inappropriate stock of production are bunding, ravine reclamation structures, check dams, boulder checks, diversion drains, etc. (Udachan, 2001, ch.3).

Social capital and watershed development

Rather than probing technical facets of the production it should be more vital to focus on social capital aspects of accomplishing sustainability, productivity, and equity in the villages. MYRADA clearly states that the social capital (“software”) is more important than the technical aspects of the productivity (“hardware”) for watershed management to be successful in the long run:

“...it has become clear that the major element of sustainable watershed projects is in the software, not in the hardware. Projects are sustainable and bring long-lasting change if people are involved in design, implementation and in maintenance” (ibid, p.49).

This demonstrates that community mobilisation, conflict resolution, and institution building (in short: social capital) are most important for a successful collective action like watershed development.

After having a detailed look at the nature of MBCA in the five villages (that is, watershed development actions), let us analyze the nature of social capital among the villagers.

Social Capital – Structural and cognitive

To be relevant to development activities in Gulbarga district, indicators of social capital should relate to locally relevant activities. Six questions associated with local, agrarian circumstances in India have been combined to construct an answer sheet on social capital in general (Krishna and Uphoff, 1999, pp. 63-64). The first three questions relate to *structural* social capital, ie networks and social relationships. The last three yield dimensions of *cognitive* social capital, ie trust, norms, and rules (see Annex 4). Village leaders responded to the questions. For a discussion on how to measure structural and cognitive social capital, consult ch.3.

Deal with crop disease: *If a crop disease were to affect the entire standing crop of this village, then who do you think would come forward to deal with this situation?*

(Every person would deal with the problem individually=1, Neighbors among themselves=2, The dominant political faction=3, All village leaders acting together=4, The entire village=5)

According to the answer sheet the members of all five villages would deal with the problem individually or through close neighbors (suggesting low levels of social capital).

Look after common lands: *Who in this village has historically looked after the common pasture lands?*

(No one does anything to protect these lands =1, There are old customs that are followed here =2, Our leaders take decisions that we all follow =3, A village committee exists which takes these decisions collectively =4, We all discuss and collectively decide what is to be done =5)

Regarding the second question on structural social capital, in Okaly, Marimanchi, Kalmud, and Seevanagi no one does anything for common pasture lands (indicating insufficient amounts of social capital), but in Dongrugaon all discuss and collectively decide what is to be done for these common lands (indicating abundant stocks of social capital).

Resolve dispute: *Suppose two people in this village had a dispute with each other. Who do you think would resolve this dispute?*

(No one =1, Some political leaders =2, Their neighbors =3, Their caste fellows =4, The entire village collectively =5)

In Kalmud the entire village would collectively resolve the dispute (indicating high levels of social capital), in Okaly and Marimanchi the caste fellows would resolve the conflict (signifying somewhat high levels of social capital), and in Dongrugaon and Seevanagi neighbors would resolve the dispute (indicating intermediate levels of structural social capital).

Correct people's children: *Suppose some children of the village tend to stray from the correct path; for example they are disrespectful to elders, they disobey their parents, are mischievous, etc. Who in this village feels it right to correct other people's children?*

(No one =1, Only close relatives =2, Relatives and also neighbors =3, Anyone from the village =4)

Regarding the fourth question, average members in all villages seem inclined to act in the same way, ie anybody in the village would correct misbehavior and disrespectfulness of other people’s children (signifying large pools of social capital).

Reason protect plants: *Which among the following is the most important reason why people in this village plant and protect grasses and trees (check one)?*

(Because fodder and fuelwood are in short supply =1, Because this way there is less need to protect our crops from cattle =2, Because this is the right thing to do and earns us religious merit =3, Because this activity keeps the villagers united =4)

Question five also produces identical answers. Everybody would plant and protect grasses and trees mainly because fodder and fuelwood are in short supply (indicating a lack of social capital).

Own or split land: *Suppose a friend of yours in this village faced the following alternatives, which one would he or she prefer most?*

(Own and farm 10 bighas of land entirely by themselves =1, Own and farm 25 bighas of land jointly with one other person =2) (each would be entitled to 12.5 bighas).

According to the answer sheet an average Okaly-villager would choose to own 10 bighas individually (signifying low levels of cognitive social capital), and the remaining villagers would opt for split ownership of 25 bighas of land (12.5 bighas respectively).

Table 4: Social Capital – General

Village	Crop disease	Structural		Cognitive		
		Common Land	Resolve dispute	Correct people's children	Reason protect plants	Own or split land
Okaly	1 (2)	1.	4.	4.	1.	1.
Marimanchi	1 (2)	1.	4.	4.	1.	2.
Kalmud	1 (2)	1.	5.	4.	1.	2.
Dongrugaon	2.	5.	3.	4.	1.	2.
Seevanagi	1.	1.	3.	4.	1.	2.

A majority of the answers indicate a high level of social capital, but a few (“crop disease” and “reason to protect plants”) reflect lower levels of social capital. The Okaly villager

would prefer an individual land ownership, which signifies a low level of trust, thereby lowering the relative rate of social capital in comparison to other villages. All the Dongrugaon villagers look after common lands, which increases the relative rate of social capital in this village. Most questions, (4 out of 6) are answered in a way that indicate rather large pools of social capital (structural and cognitive). Observe that the covariance on the answers is relatively high. For an analysis of the results, see ch.5.

Social capital – Equal participation

Questions relating specifically to equal participation in collective watershed actions signify rich stocks of structural social capital in MYRADA watershed development activities (for details, see Annex 5). (It is important to observe that the previous section relates to structural and cognitive social capital in general and this section to structural social capital only in conjunction with MYRADA watershed activities.)

Table 5: Social Capital – MYRADA-specific

Village	Group partic	No. of castes	Level of partic	Female partic
Okaly	4	4	4	3
Marimanchi	4	4	4	4
Kalmud	3	4	4	3
Dongrugaon	4	4	3	3
Seevanagi	4	4	3	3

What is the level of group participation in the decisions (concerning watershed projects)?

(All members participate= 4, a majority participate= 3, a few= 2, only the group leader= 1)

What is the caste structure of the group (concerning watershed projects)?

(Three or more different castes (subcastes included)= 4, two different castes= 3, one caste and a subcaste= 2, one subcaste only= 1)

What is the level of participation in agricultural extension activities (training programmes) among small and marginal farmers, owning less than 2.5 acres of land?

(100%= 4, 75%= 3, 50%= 2, 25%= 1, 0%= 0)

What is the level of participation among the female members in the meetings?

(All female members participate= 4, a majority= 3, a few = 2, only one= 1, none= 0)

In Okaly, everybody in the watershed development group partakes in decisions that relate to the collective action. Three or more castes are represented in the watershed development group. All small farmers are involved in agricultural extension programmes. A majority (but not all) of the female members participate in the meetings.

In Marimanchi, everyone in the watershed development group is involved in decision-making that relates to collective action. Three or more castes are included in the watershed development group. All small farmers participate in agricultural extension programmes. All female members participate in the meetings.

Regarding Kalmud, a majority partake in decisions that relate to the watershed collective action. Three or more castes are represented in the watershed development group. All small farmers participate in agricultural extension programmes. A majority of the female members are present in the meetings.

In the case of Dongrugaon, everybody in the watershed development group is integrated in decision-making on collective action. Three or more castes are included in the watershed development group. A majority of the small farmers are involved in agricultural extension programmes. A majority of the female members participate in the meetings.

In Seevanagi, everybody in the watershed development group partake in decisions that relate to collective action. Three or more castes are represented in the watershed development group. A majority of the small farmers participate in agricultural extension programmes. A majority of the female members are present in the meetings.

In conclusion, the watershed groups seem to breed high levels of equity and group participation (although participation of females and small farmers could in some few cases be higher), indicating that the pool of social capital is relatively rich in activities that concern watershed development. Interestingly, the results of MYRADA watershed activities have been very positive in terms of productivity, equity, sustainability, and degree of satisfaction (see ch.4.3 or Annex 3).

Though it would not be correct to directly compare the previous section (estimating social capital in general) with this one (estimating social capital in watershed activity groups) it is

clear that the previous section indicates lower levels of social capital, demonstrating that the MYRADA watershed activities entail higher levels of social capital.

4.3 Household analysis – trust, rules, and norms

This section estimates social capital on a household level instead of on a community or organizational level (for details, see Annex 6). Although the household analysis relates to both structural and cognitive social capital, the main focus is on *individual* perceptions of trust, rules, and norms among the villagers, yielding measures on cognitive social capital.

Age: Age (years).

Gender: Gender (male=1, female=2).

Educ: Education (no education=0, primary school=2, secondary =3, high school=4, undergraduate=5, graduate=6)

Land: landholding (bighas) .

Caste: Caste status

Coll act: Number of collective actions during the last 12 months.

Decision: Decision by head alone or by all.

Rules: Clear rules, easy to follow and are implemented fairly (on a scale from 1-5, where 1=very clear rules).

Trust (tolerance of dishonesty):

Lies: *Whenever it is to their advantage, people will tell lies. Do you agree with this?*

Leader honesty: *It is not necessary for a leader to be exactly honest in public dealings if he knows it will interfere with getting his work done. Do you agree with this?*

Gvmnt honesty: *If a leader in local government is highly skilled, one should overlook minor instances of dishonesty. Do you agree with this?*

(Disagree=1, Rather indifferent=2, Agree=3)

Okaly

Respondents: The respondents were between 23 and 70 years old, all female. Shivamma (Guttedar caste), the oldest in the group, lives in the household that owns most land, (8 bighas). Sharanamma (Sangama caste) is the youngest in the group and studies at college. She lives in a family that owns 3 bighas of land. The remaining group members, 25-40 years old, own no or only one bigha of land, have no education, and belong to the Dhobi or Lingayat caste.

Responses: Since MYRADA is present in the village, all the respondents have experienced collective action during the last year. The rules and guidelines for this collective action

(MYRADA watershed development) have been very clear. Regarding trust and lies, they think that fellow villagers would not tell lies (not even if it would be advantageous to them), a leader has no right to lie sometimes, neither does a high administrator. In all respondents' families, except for Shashila's, everybody partakes in domestic decisions. In Shashila's family the head make all major decisions.

Marimanchi

Respondents: The age ranges between 28 and 65 years, all women. Chamli (35 years) has finished primary school, and Puthibai has fulfilled her studies at the secondary school. These two are possibly the wealthiest group participants, because their families own 6 and 5 bighas of land respectively. All respondents belong to the Lambadi caste. The remaining interviewees have 2 bighas of land or slightly more.

Responses: Regarding collective action, rules, and lies the responses in Marimanchi are identical to the responses in Okaly. That is, they have experienced collective (MYRADA) action, argue that the rules for collective actions are very clear, do not think that their fellow villagers are prone to lie, and demand that leaders and administrators should always be honest in public dealings. In all respondents' families, with the exception of Manglabai, a few family members make the domestic decisions. In Manglabai's case only the head is a decision-maker.

Table 6a – Household Analysis

	Age	Gender	Educ.	Land	Caste	Coll Act	Decision head/all	Rules	Lies	Leader honesty	Gvmnt honesty
Okaly											
Shivamma	70	2	0	8	Guttedar	1	3	1	1	1	1
Sharikala	25	2	0	0	Dhobi	1	3	1	1	1	1
Sharanamma	23	2	5	3	Sangama	1	3	1	1	1	1
Mallamma	35	2	0	1	Lingayat	1	3	1	1	1	1
Shashila	40	2	0	1	Dhobi	1	1	1	1	1	1
Marimanchi											
Rupli	55	2	0	4	Lambadi	1	2	1	1	1	1
Gudjabai	65	2	0	3	Lambadi	1	2	1	1	1	1
Chamli	35	2	2	6	Lambadi	1	2	1	1	1	1
Puthibai	28	2	3	5	Lambadi	1	2	1	1	1	1
Manglabai	40	2	0	2	Lambadi	1	1	1	1	1	1

Seevanagi

Respondents: The oldest is 50 and the youngest is 26 years, all females. Three of the respondents – Ratnamma (40), Mangala (36), and Givita (26) – have finished primary, secondary, and high school respectively. Shankvamma and Baramma have no education. Givita’s family owns 10 bighas and Ratnamma’s owns 8 bighas of land, which places them on the two top notches regarding land ownership in the group. Baramma (48) has the lowest score in the group (3 bighas). Baramma belongs to the Agara caste and the others are Lingayats.

Responses: The Seevanagi cohort has responded in identically the same way as the Marimanchi group regarding collective action, rules, and trust (lies). However, only a few make general decisions in Baramma’s home and everybody partakes in decisionmaking in the other respondents’ homes.

Kalmud

Respondents: Ages range from 28 to 53. All respondents are females. Education: Secondary school, high school or no education. Umadevi (Lingayat) is the youngest, most well-educated, whose family owns most land (10 bighas). Siddamma and Devamma (Reddy and Kabbaliga) are the oldest, least educated, and own most land.

Responses: The responses are almost perfectly identical to the Seevanagi group, but one exception can be perceived: Rukmini and Umadevi expect total honesty from a high politician, while the remaining three respondents are indifferent to this question.

Table 6b – Household Analysis

	Age	Gender	Edu	Land	Caste	Coll act	Decision head/all	Rules	Lies	Leader honesty	Gvmnt honesty
Seevanagi											
Shankvamma	50	2	0	6	Lingayat	1	3	1	1	1	1
Ratnamma	40	2	3	8	Lingayat	1	3	1	1	1	1
Mangala	36	2	2	5	Lingayat	1	3	1	1	1	1
Givita	26	2	4	10	Lingayat	1	3	1	1	1	1
Baramma	48	2	0	3	Agara	1	2	1	1	1	1
Kalmud											
Ruamini	45	2	3	8	Reddy	1	3	1	1	1	1
Maramma	33	2	3	6	Lingayat	1	3	1	1	1	2
Siddamma	50	2	0	10	Reddy	1	3	1	1	1	2
Umadevi	28	2	4	4	Lingayat	1	3	1	1	1	1
Devamma	53	2	0	9	Kabbaliga	1	2	1	1	1	2

Dongrugaon

Respondents: Ages range between 20 to 55. Everyone is a Lingayat. Gouvamma is the oldest and has most land property (13 bighas). Nagamma (35 yrs) has finished primary school and has 3 bighas of land (ie, least amount of land in the cohort). Kasturi (40) has completed secondary school and is responsible for 9 bighas of land. Bhosappa (20 yrs) is male, studies at the university and has 12 bighas. Sashila (47) has 10 bighas of land. This implies that the Dongrugaon group is relatively rich in land.

Responses: Everyone has experienced collective action during the last year, and the rules entailing this (MYRADA) action on structural social capital were regarded as being very clear. They think that other villagers are honest, and expect leaders to be fair. Gouvamma and Bhosappa are indifferent to whether a high administrator or politician may sometimes tell minor lies. The rest expect total honesty. In Gouvamma's family a few make domestic decisions. The other respondents announced that all family members partake in decisionmaking.

Table 6c – Household Analysis

	Age	Gender	Edu	Land	Caste	Coll act	Decision head/all	Rules	Lies	Leader honesty	Gvmnt honesty
Dongrugaon											
Gouvamma	55	2	0	13	Lingayat	1	2	1	1	1	2
Nagamma	35	2	2	3	Lingayat	1	1	1	1	1	1
Karturi	40	2	3	9	Lingayat	1	1	1	1	1	1
Bhosappa	20	1	6	12	Lingayat	1	1	1	1	1	2
Sashila	47	2	0	10	Lingayat	1	1	1	1	1	1

In conclusion, the covariance is high between the groups. Particularly in questions that probe rules for collective actions, lies among fellow villagers, and leader honesty. Everybody thinks that the rules have been clear and expect honesty. A few respondents in Kalmud and Dongrugaon do not care much about minor instances of dishonesty among skilled local government leaders, but the remaining respondents do not accept such dishonesty. It is interesting to compare this variable on cognitive social capital with the variables of land ownership and education (structural social capital). Villagers that are rich

in land and education seem to more frequently accept the high politicians and administrators to lie.

The largest variance is found within the respondents' families. A majority announced that all family members partake in decisions, albeit some respondents declared that a few or only the head decides. Especially the Marimanchi and Dongrugaon cohorts announced that only the head or a few decide.

To acquire a brief analysis on the household responses one could compare the answers on education in Annex 1 and 6. Then it becomes clear that according to Annex 1 village members generally have finished secondary or high school, but according to Annex 6, 13 out of 25 respondents had no education at all. Two factors may have triggered this bias. Either the village leader provided us with too-optimistic answers on the level of education in Annex 1, or Annex 6 presents lower levels of education since the respondents were females, indicating low levels of education among the women.

The lack of consistency in the responses in Annexes 1 and 6 could perhaps be explained by the villages' confinement within the same cultural, religious, linguistic, and geographical settings. For example, it is notable that all (!) village leaders and households claim that there is a very high consensus between rich and poor, and between young and old. It is anyway clear that the responses indicate a very high covariance on norms, trust, and heterogeneity, which could imply that the nature of social capital is almost identical in all five villages.

Another reason for the uniformity in the responses may be found in the village members' desire to present idealistic answers rather than true answers. My field co-worker (who was brought up on the countryside in Karnataka) confirms this, saying that "...it is the same in all villages", and "...they want to give the picture that their village is perfect and without any problems".

5. Social capital and collective action

This chapter fulfils the goals of this study and explains how social capital and collective actions vary according to the characteristics of the communities and households; first by pointing out differences between the villages in terms of community characteristics, social capital, and collective actions; second by comparing these differences with diverse trends regarding the level of social capital.

5.1 How the villages differ in terms of community characteristics

The community analysis (ch.4.1) yielded very identical results regarding level of education, caste structure, and heterogeneity in the villages. The dominant caste accounts for over half of the number of households, which should contribute to a high capacity for collective action. The most obvious difference is found among the diverse castes. The dominant caste is Lingayat in Okaly, Dongrugaon, and Seevanagi; the Marata caste dominates in Marimanchi, and Reddy is the largest caste in Kalmud. One may assume that this only difference has certain effects on the capacity for collective actions, but I could not find any relationship between community characteristics (regarding dominant caste) and general level of social capital among the villages.

In the household analysis (ch.4.3) only one major difference in community characteristics pervades the villages. In the Okaly group the average amount of land ownership is 2.6 bighas; in Marimanchi the amount is 4.0; in Seevanagi 6.4; in Kalmud 7.4; and in Dongrugaon the amount is as high as 9.4 bighas. However, since each group consisted of only five persons the cohort might not have represented the whole village. It is only clear that different castes are dominant in different villages, and that some villages may face more abundant per capita land supply.

5.2 How the villages differ in terms of social capital

If strictly consulting the numbers in ch.4.4, the general measure of social capital, Dongrugaon should face the highest levels of social capital with a weighted average of 4.25 units; Kalmud has an average score of 3.65; Marimanchi 3.45; Seevanagi 3.25; and Okaly faces the lowest levels of social capital with a weighted average of 2.95 units⁸.

⁸ The weighted averages were calculated by summing the scores of each village, after first standardizing them by rescaling the values so that each had a maximum range of one. Each variable thus had an equal weight within the index. Maximum weighted average is 6.0 units per village in table 7, and 4.0 units in table 8.

Table 7: General Social Capital – Weighted Averages

Village	Crop Disease	Structural		Cognitive			Average
		Common Land	Resolve dispute	Correct children	Reason protect Plants	Own or split land	
Okaly	1 (2)	1	4	4	1	1	2,95
Marimanchi	1 (2)	1	4	4	1	2	3,45
Kalmud	1 (2)	1	5	4	1	2	3,65
Dongrugaon	2	5	3	4	1	2	4,25
Seevanagi	1	1	3	4	1	2	3,25

When consulting ch.4.4, the MYRADA-specific measure of social capital, one perceives that the weighted averages are 4.0 for Marimanchi; 3.75 for Okaly; and 3.5 for Kalmud, Dongrugaon, and Seevanagi.

Table 8: MYRADA-specific Social Capital – Weighted Averages

Village	Group partic	No of castes	Level of partic	Female partic	Average
Okaly	4	4	4	3	3,5
Marimanchi	4	4	4	4	4
Kalmud	3	4	4	3	3,75
Dongrugaon	4	4	3	3	3,5
Seevanagi	4	4	3	3	3,5

Since the number of respondents is so low and the responses are so identical, it is not feasible to draw any definite conclusions on social capital levels in the villages. But it is possible to distinguish that the MYRADA-specific level of social capital is high in all five villages, and the level of general social capital is supposed to be relatively high in Dongrugaon and low in Okaly. The MYRADA-specific level of social capital is thus much higher than the general level of social capital.

5.3 Evaluation of the MYRADA actions and how the villages differ in terms of collective action

No major signs of difference among the villages in terms of collective action can be perceived. However, this does not necessarily imply that differences in social capital do not matter. The reason should be that MYRADA conducts the same types of watershed

development programs in all villages, obeying the same criteria, with the same staff conducting the process, yielding a conformity in collective action methods, and resulting in a certain level of social capital in all five villages within this type of MBCA. I think this is a plausible solution, because village differences in social capital seem to be very small, and the level of structural social capital is low.

My general impression is that rather inert village members waited for “something” (eg. an external agent) to kick things into gear. In this case the external agent is MYRADA, a local NGO that has rather successfully implemented structural social capital. Ch.4.1 clearly demonstrates that all segments of the village members participate in the development programs, the degree of satisfaction is high according to both village members and MYRADA staff, and the increase in productivity has been 100% in a two year span ⁹.

Hence, there are no distinguishable differences in terms of collective action among the villages, and it is clear that the MYRADA projects are relatively rich in social capital and face increased productivity.

5.4 How social capital and collective actions vary according to the characteristics of the communities.

The three previous sections have demonstrated that differences among the five villages in community and household characteristics are negligible. In addition, only one major type of MBCA pervades all five villages (MYRADA watershed development). The only dissimilarity in terms of social capital exists between general social capital and the social capital that is linked to MBCA. One reason for this is likely that MYRADA as an external force implements collective actions aiming at fulfilling principles of sustainability, productivity, and equity within each community.

⁹ Observe, however, that most information on productivity increases have been obtained from MYRADA staff.

6. Main findings

This chapter highlights main findings of the Minor Field Study.

(i) The level and types of social capital in general were very identical among all the selected villages. (ii) The level of general social capital seemed low when looking at the incapacity to independently implement and carry out collective actions in the villages. (iii) The level of social capital that entailed watershed activities was relatively high. This could indicate that collective actions increase the pool of social capital. Also, MYRADA provided an input of structural social capital to the villages as the watershed activity was carried out. (iv) As the collective action proceeded and the social capital increased, productivity doubled within a span of two years. (v) An *external agent* (MYRADA) had to provide an input of structural social capital, like financial capital and knowledge of collective actions (eg, institution building, group dynamics, and contacts) into each village to spur growth of social capital and MBCA capacity. As a result, productivity doubled in two years and participation of females, low castes, and poor farmers in decision-making has increased, and a more sustainable and independent long-run development now seems to be a reality in these villages. According to the arguments developed in ch.3.1 the MYRADA-specific input of structural social capital in the long run should yield new dimensions of cognitive social capital (due to the transparency between structural and cognitive social capital). For example, an increased long-run productivity, more contacts with private and financial institutions, and better networks could change attitudes, beliefs, and behavior of the villagers. Modernization thus seems to be undergone not only in the society but also in people's minds.

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Annex 1

Questionnaire 1 – Community Profile

There are a number of key factors that, according to the literature on social capital, largely influence MBCA outcomes in a community. For example, Putnam (1993) assesses the number of formal associations, voting turnout, and newspaper readerships in his work. However, according to Krishna and Uphoff (1999, p.23) none of these variables are significant when applied to 64 rural villages in India. Thus other variables need to be considered, variables that are significant specifically for rural villages in India. Krishna and Uphoff (1999) demonstrate that in multiregression and multivariate analyses, a correlation of social capital and trust, reciprocity, solidarity, and informal networking, and the like, can be perceived. These findings, along with some earlier reports stressing the significance of caste, heterogeneity, and lack of trust as impediments to social capital (eg, Johnston and Clarke, 1982; de Mello, 2000; Morris, 1998) inspired me to select the following variables for scrutiny on a village-level.

LITERACY: Level of literacy among the majority of village members.

(No education, Primary, Secondary, High School, Undergraduate, Graduate, Missing value)

CASTE#: The number of castes existing in the village.

CASTE%: The share of households belonging to the largest caste (in relation to the total number of households).

Heterogeneity: To what extent do the following differences tend to divide people in your village (Not at all=1, Somewhat=2, Very much=3 units):

EDUC: Differences in education?

WEALTH: Differences in wealth?

CASTE: Differences in caste?

AGE: Differences in age?

OLD/NEW: Differences between old inhabitants and new settlers?

Answer Sheet 1

Village	Literacy	Caste#	Caste%	<i>Heterogeneity</i>				
				Edu	Wealth	Caste	Age	Old/new
Okaly	High school	5.	60% (Lingayat)	1.	1.	3.	1.	1.
Marimanchi	Secondary	4.	50% (Marata)	1.	1.	3.	1.	1.
Kalmud	Secondary	5.	60% (Reddy)	1.	1.	3.	1.	1.
Dongrugaon	High school	4.	60% (Lingayat)	1.	1.	2.	1.	1.
Seevanagi	High school	5.	50% (Lingayat)	1.	1.	2.	1.	1.
<i>Share (%) of total no. of households</i>				<i>Not at all =1 Somewhat =2 Very much =3</i>				

Annex 2

Questionnaire 2 – General Propensity for MBCA

Questionnaire 2 was initially constructed to yield a variable on collective action in general, without the influence of MYRADA. It was expected that this questionnaire would function as a broader measure of collective action in the five villages.

COMM PROJ: About how many community development projects (implemented by the villagers themselves) have been completed during the last five years?

COLL ACT: About how many times have villagers collectively presented a demand or need to a high administrative official or politician during the last five years?

REL ADMIN: How good or bad is the relationship between villagers and administrative officials in the community (on a scale from 1-5, where 1 = Excellent relationship)?

As mentioned, these three questions should yield a rather broad measure of collective action within the village, while Questionnaire 1 is focused specifically on the MYRADA activities, producing a narrower measure of the number of collective action.

Answer Sheet 2

Village	COMM PROJ	COLL ACT	REL ADMIN
Okaly	0.	4-5 per year*	2.
Marimanchi	0.	0.	2.
Kalmud	0.	3-4 per year	2.
Dongrugaon	1.	5-6 per year	2.
Seevanagi	0.	4-5 per year	2.

**Go to important
villager*

Annex 3

MYRADA has good relations with the local self-help groups, watershed development committees, and other village-level institutions (IISD, 1999, pp.2-3), which can be confirmed below.

Questionnaire 3 – MYRADA Activity Index

INIT: How many times altogether has the MYRADA staff initiated activities in all villages during the last two years?

TYPE: What types of activities has MYRADA initiated in the five villages?

FREQ: How frequently (times per month) has MYRADA staff visited each village during the last two years?

PROD: How much has the quantity of produced fodder increased as a direct result of the initiation?

SHARE: What share (in percent) of total costs would villagers be ready to contribute to a new MYRADA project?

SATISF: What do you think is the degree of satisfaction among the villagers regarding MYRADAs recent activities (on a scale from 1-5, where 1=strongly satisfied)?

Answer Sheet 3

NGO	INIT	TYPE	FREQ	PROD	SHARE	SATISF
MYRADA	More than 10	Watershed development	4 visits/month	100 % increase in two years	25%.	Highly satisfied

Annex 4

A Social Capital Sheet has been constructed by probing six questions. The first three elucidate aspects of structural social capital, and the last three questions focus on cognitive social capital.

Questionnaire 4 – Social Capital

Deal with crop disease: *If a crop disease were to affect the entire standing crop of this village, then who do you think would come forward to deal with this situation?*

(Every person would deal with the problem individually=1, Neighbors among themselves=2, The dominant political faction=3, All village leaders acting together=4, The entire village=5)

Comment: According to the answer sheet the members of all the five villages would deal with the problem individually or via close neighbors (indicating low levels of social capital).

Look after common lands: *Who in this village has historically looked after the common pasture lands?*

(No one does anything to protect these lands =1, There are old customs that are followed here =2, Our leaders take decisions that we all follow =3, A village committee exists which takes these decisions collectively =4, We all discuss and decide what is to be done =5)

Comment: Regarding the second question on structural social capital, in Okaly, Marimanchi, Kalmud, and Seevanagi no one does anything for common pasture lands (indicating low levels of social capital), but in Dongrugaon everybody discusses and decides what is to be done for these common lands (indicating high levels of social capital).

Resolve dispute: *Suppose two people in this village had a dispute with each other. Who do you think would resolve this dispute?*

(No one =1, Some political leaders =2, Their neighbors =3, Their caste fellows =4, The entire village collectively =5)

Comment: In Kalmud the entire village would collectively resolve the dispute (indicating high levels of social capital), in Okaly and Marimanchi the caste fellows would resolve the

conflict (indicating somewhat high levels of social capital), and in Dongrugaon and Seevanagi, neighbors would resolve the dispute (indicating intermediate levels of structural social capital).

Correct people's children: *Suppose some children of the village tend to stray from the correct path; for example they are disrespectful to elders, they disobey their parents, are mischievous, etc. Who in this village feels it right to correct other people's children?*

(No one =1, Only close relatives =2, Relatives and also neighbors =3, Anyone from the village =4)

Comment: Regarding the fourth question, the members in all villages are inclined to act in the same way, ie anybody in the village would correct misbehavior and disrespectfulness of other people's children (indicating high levels of social capital).

Reason protect plants: *Which among the following is the most important reason why people in this village plant and protect grasses and trees (check one)?*

(Because fodder and fuelwood are in short supply =1, Because this way there is less need to protect our crops from cattle =2, Because this is the right thing to do and earns us religious merit =3, Because this activity keeps the villagers united =4)

Comment: Question five also produces identical answers. Everybody would plant and protect grasses and trees mainly because fodder and fuelwood are in short supply (indicating low levels of social capital).

Own or split land: *Suppose a friend of yours in this village faced the following alternatives, which one would he or she prefer most?*

(Own and farm 10 bighas of land entirely by themselves =1, Own and farm 25 bighas of land jointly with one other person =2) (each would be entitled to 12.5 bighas)

Comment: According to the answer sheet the average Okaly-villager would choose to own 10 bighas individually (indicating low levels of cognitive social capital), and the remaining villagers would opt for split ownership of 25 bighas of land (12.5 bighas respectively).

The questions above have been adopted from Krishna's and Uphoff's work (1999), without any interventions. The reason for doing this is manifold. For instance, the field settings are very similar in both studies, where rural Indian villagers are interviewed. The questions

have been tested by experienced fieldworkers and are proved to be successful in yielding a measure of social capital.

Answer Sheet 4

Village	Crop disease	Structural		Cognitive		
		Common land	Resolve dispute	Correct people's children	Reason protect plants	Own or split land
Okaly	1 (2)	1.	4.	4.	1.	1.
Marimanchi	1 (2)	1.	4.	4.	1.	2.
Kalmud	1 (2)	1.	5.	4.	1.	2.
Dongrugaon	2.	5.	3.	4.	1.	2.
Seevanagi	1.	1.	3.	4.	1.	2.

Annex 5

Questionnaire 5 – Additional questions

Some questions regarding level of participation in watershed groups were added before leaving for data collection:

What is the level of group participation in the decisions (concerning watershed projects)?

(All members participate= 4, a majority participate= 3, a few= 2, only the group leader= 1)

What is the caste structure of the group (concerning watershed projects)?

(Three or more different castes (subcastes included)= 4, two different castes= 3, one caste and a subcaste= 2, one subcaste only= 1)

What is the level of participation in agricultural extension activities (training programmes) among small and marginal farmers, owning less than 2.5 acres of land?

(100%= 4, 75%= 3, 50%= 2, 25%= 1, 0%= 0)

What is the level of participation among the female members in the meetings?

(All female members participate= 4, a majority= 3, a few = 2, only one= 1, none= 0)

Answer Sheet 5

Village	Group partic.	No. of castes	of Level partic.	of Female partic.
Okaly	4	4	4	3
Marimanchi	4	4	4	4
Kalmud	3	4	4	3
Dongrugaon	4	4	3	3
Seevanagi	4	4	3	3

Annex 6

Questionnaire 6 – Household-level analysis

This questionnaire illuminates the significance of a number of variables of social capital within households. The following variables are probed:

Age: Age (years).

Gender: Gender (male=1, female=2).

Educ: Education (no education=0, primary school=2, secondary =3, high school=4, undergraduate=5, graduate=6)

Land: landholding (bighas) .

Caste: Caste status

Coll act: Number of collective action during the last 12 months.

Decision: Decision by head alone or by all.

Rules: Clear rules, easy to follow and are implemented fairly (on a scale from 1-5, where 1=very clear rules).

Trust (tolerance for dishonesty):

Lies: *Whenever it is to their advantage, people will tell lies. Do you agree with this?*

Leader honesty: *It is not necessary for a leader to be exactly honest in public dealings if he knows it will interfere with getting his work done. Do you agree with this?*

Gvmnt honesty: *If a leader in local government is highly skilled, one should overlook minor instances of dishonesty. Do you agree with this?*

(Disagree=1, Rather indifferent=2, Agree=3)

Answer Sheet 6a

	Age	Gender	Educ.	Land	Caste	Coll Act.	Decision head/all	Rules	Lies	Leader honesty	Gvmnt honesty
Okaly											
Shivamma	70	2	0	8	Guttedar	1	3	1	1	1	1
Sharikala	25	2	0	0	Dhobi	1	3	1	1	1	1
Sharanamma	23	2	5	3	Sangama	1	3	1	1	1	1
Mallamma	35	2	0	1	Lingayat	1	3	1	1	1	1
Shashila	40	2	0	1	Dhobi	1	1	1	1	1	1
Marimanchi											
Rupli	55	2	0	4	Lambadi	1	2	1	1	1	1
Gudjabai	65	2	0	3	Lambadi	1	2	1	1	1	1
Chamli	35	2	2	6	Lambadi	1	2	1	1	1	1
Puthibai	28	2	3	5	Lambadi	1	2	1	1	1	1
Manglabai	40	2	0	2	Lambadi	1	1	1	1	1	1

Answer sheet 6b

	Age	Gender	Edu	Land	Caste	Coll act	Decision head/all	Rules	Lies	Leader honesty	Gvmnt honesty
Seevanagi											
Shankvamma	50	2	0	6	Lingayat	1	3	1	1	1	1
Ratnamma	40	2	3	8	Lingayat	1	3	1	1	1	1
Mangala	36	2	2	5	Lingayat	1	3	1	1	1	1
Givita	26	2	4	10	Lingayat	1	3	1	1	1	1
Baramma	48	2	0	3	Agara	1	2	1	1	1	1
Kalmud											
Ruamini	45	2	3	8	Reddy	1	3	1	1	1	1
Maramma	33	2	3	6	Lingayat	1	3	1	1	1	2
Siddamma	50	2	0	10	Reddy	1	3	1	1	1	2
Umadevi	28	2	4	4	Lingayat	1	3	1	1	1	1
Devamma	53	2	0	9	Kabbaliga	1	2	1	1	1	2

Answer sheet 6c

	Age	Gender	Edu	Land	Caste	Coll act	Decision head/all	Rules	Lies	Leader honesty	Gvmnt honesty
Dongrugaon											
Gouvamma	55	2	0	13	Lingayat	1	2	1	1	1	2
Nagamma	35	2	2	3	Lingayat	1	1	1	1	1	1
Karturi	40	2	3	9	Lingayat	1	1	1	1	1	1
Bhosappa	20	1	6	12	Lingayat	1	1	1	1	1	2
Sashila	47	2	0	10	Lingayat	1	1	1	1	1	1