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UNDERSTANDING AND MEASURING SOCIAL CAPITAL:

A SYNTHESIS OF FINDINGS AND RECOMMENDATIONS FROM THE SOCIAL CAPITAL INITIATIVE

By Christiaan Grootaert and Thierry van Bastelaer

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FOREWORD

There is growing empirical evidence that social capital contributes significantly to sustainable development. Sustainability is to leave future generations as many, or more, opportunities as we ourselves have had. Growing opportunity requires an expanding stock of capital. The traditional composition of natural capital, physical or produced capital, and human capital needs to be broadened to include social capital. Social capital refers to the internal social and cultural coherence of society, the norms and values that govern interactions among people and the institutions in which they are embedded. Social capital is the glue that holds societies together and without which there can be no economic growth or human well-being. Without social capital, society at large will collapse, and today's world presents some very sad examples of this.

The challenge of development agencies such as the World Bank is to operationalize the concept of social capital and to demonstrate how and how much it affects development outcomes. Ways need to be found to create an environment supportive of the emergence of social capital as well as to invest in it directly. These are the objectives of the Social Capital Initiative (SCI). With the help of a generous grant of the Government of Denmark, the Initiative has funded a set of twelve projects which will help define and measure social capital in better ways, and lead to improved monitoring of the stock, evolution and impact of social capital. The SCI seeks to provide empirical evidence from more than a dozen countries, as a basis to design better development interventions which can both safeguard existing social capital and promote the creation of new social capital.

This working paper series reports on the progress of the SCI. It hopes to contribute to the international debate on the role of social capital as an element of sustainable development.

Ismail Serageldin
Former Vice-President
Special Programs

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UNDERSTANDING AND MEASURING SOCIAL CAPITAL: A SYNTHESIS OF FINDINGS AND RECOMMENDATIONS FROM THE SOCIAL CAPITAL INITIATIVE

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ACKNOWLEDGMENTS

We are profoundly grateful to the researchers and task managers who participated in the Social Capital Initiative. Their successful completion of the twelve studies of the Initiative has produced a unique body of evidence on the importance of social capital for economic and social development. Our synthesis of this work cannot possibly do justice to the richness of the findings and we urge interested readers to consult the individual papers.

As this synthesis paper marks the conclusion of the Social Capital Initiative, we would like to take this opportunity to thank our colleagues on the Social Capital Team for their many contributions: Susan Assaf, Gracie Ochieng, Gi-Taik Oh, Tine Rossing Feldman, and Casper Sorensen.

We acknowledge gratefully the guidance of the Steering Committee and the leadership of Ian Johnson, Vice-President, Environmentally and Socially Sustainable Development. We would like to pay tribute to Ismail Serageldin whose vision led to the creation of the Social Capital Initiative. We also honor the memory of Mancur Olson whose ideas and contributions shaped the early phases of the Initiative.

The Social Capital Initiative received generous funding from the Government of Denmark.

Christiaan Grootaert
Thierry van Bastelaer

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EXECUTIVE SUMMARY

The Social Capital Initiative (SCI), funded by the Government of Denmark, set out in 1996 to assess the impact of social capital on the effectiveness of development projects and to contribute to the development of indicators for monitoring social capital and methodologies for measuring its impact. The twelve projects funded by the SCI (all of which were successfully completed) have provided strong evidence that social capital is a pervasive ingredient and determinant of progress in many types of development projects, and an important tool for poverty reduction. The studies have shown, using quantitative as well as qualitative analytical approaches, that social capital can have a major impact on the income and welfare of the poor by improving the outcome of activities that affect them. In particular, social capital was found to improve the efficiency of rural development programs by increasing agricultural productivity, improving the management of common resources, making rural trading more profitable, and energizing farmer federations. It also enhances access of poor households to water, sanitation, credit and education in rural and urban areas. It is a key factor in recovering from ethnic conflict and coping with political transition. Finally, it can reduce poverty through micro and macro channels by affecting the movement of information useful to the poor, and by improving growth and income redistribution at the national level.

The Social Capital Initiative has produced several types of outputs. All of the funded projects have produced final reports that are included in the SCI Working Papers series, available from the Social Development Department or on the Web:

www.iris.umd.edu/adass/proj/soccappubs.asp

and

www.worldbank.org/socialdevelopment

In addition, two forthcoming books will bring together the analytical results and conceptual advances of the SCI, and present a set of practical tools for measuring social capital. Throughout the different phases of the work, a series of workshops were held to raise awareness of the SCI's work within the Bank, and to obtain cross-fertilization with the respective departments of the Initiative's participants. The reach of the Initiative also extended beyond the Bank, in particular through the Social Capital and Poverty Reduction Conference, held in June 1999 and attended by a wide audience of academicians and development practitioners. The operational relevance of the Initiative is reflected in the success of the Social Capital Assessment Tool, which was developed for practitioners and researchers both inside and outside the Bank, and which is already being applied in operational activities in several regions. There has been a sustained demand for the SCI's outputs from inside and outside the Bank, as well as for advice on how to apply the analytical methods and measurement tools.

1. INTRODUCTION: THE SOCIAL CAPITAL INITIATIVE

A growing body of empirical evidence suggests that the density of social networks and institutions, and the nature of interpersonal interactions that underlie them, significantly affect the efficiency and sustainability of development programs. Yet the exact channels through which this "social capital" impacts developmental outcomes have only begun to be explored, and many lessons to be drawn from these observations for program design and implementation remain to be formulated.

To help advance the theoretical understanding and the practical relevance of this concept, the World Bank launched in October 1996 the Social Capital Initiative (SCI)[1] with generous financial support from the Government of Denmark. The Initiative had three objectives: (1) to assess the impact of social capital on project effectiveness; (2) to identify ways in which outside assistance can help in the process of social capital formation; and (3) to contribute to the development of indicators for monitoring social capital and methodologies for measuring its impact on development.

The SCI team solicited study proposals from task managers and researchers within the Bank, and a Steering Committee selected 12 proposals for funding (out of 40 received proposals) (Table 1). The selected studies represent a broad methodological spectrum (quantitative and qualitative analysis) and have a wide geographic and sectoral coverage. They examine the role of social capital at the micro, meso, and macro levels. Six studies (numbers 1 to 6) focus on demonstrating empirically the contribution made by social capital to the livelihood of households, either directly by increasing income, or indirectly through improving access to services. Five studies (numbers 7 to 11) focus on the process of accumulation and destruction of social capital, and aim to identify the critical factors in this process and whether it can be affected by donor interventions and policy. The final study (number 12) brings together the lessons learned on measuring social capital and develops a social capital assessment tool.

1 The Social Capital Initiative is formally called the Initiative on Defining, Monitoring and Measuring Social Capital. The SCI team was located in the Social Development Family of the Environmentally and Socially Sustainable Development Network.

Table 1: The 12 Studies of the Social Capital Initiative	
1.	Collective Action for Conserving and Development Watersheds in Rajasthan, India (Anirudh Krishna and Norman Uphoff).
2.	Social Capital and the Firm: The Case of Agricultural Traders in Madagascar (Marcel Fafchamps and Bart Minten).
3.	Trust and Social Cohesion in the Provision of Agricultural Extension in Mali (Catherine Reid and Lawrence Salmen).
4.	The Role of Social Capital in Determining the Effectiveness of Community-based Water Projects in Central Java, Indonesia (Jonathan Isham and Satu Kähkönen).
5.	Social Capital and Solid Waste Management: The Case of Dhaka, Bangladesh (Sheoli Pargal, Mainul Huq and Daniel Gilligan).
6.	Social Capital Networks and Household Welfare in Russia (Richard Rose).
7.	Building Social Capital through Assistance to Women's Groups and Primary Schools in Kenya (Mary Kay Gugerty and Michael Kremer).
8.	Induced Social Capital and Federations of the Rural Poor in the Andes (Anthony Bebbington and Thomas Carroll).
9.	The Relevance of Social Capital for Community-based Development: The Case of Coal Mining Areas in Orissa, India (Enrique Pantoja).
10.	Social Capital and Violent Conflict: Case Studies from Cambodia and Rwanda (Nat Colletta and Michelle Cullen).
11.	Ethnicity, Capital Formation and Conflict in Africa (Robert Bates).
12.	Cross-cultural Measures of Social Capital: The Social Capital Assessment Tool (Anirudh Krishna and Elizabeth Shrader).

Note: The principal investigators of each study are listed in parentheses.

To complement the empirical work of the 12 studies, the SCI team commissioned several conceptual contributions and literature reviews (Table 2). These include critical discussions of the concept of social capital, reviews of the empirical evidence of its impact at the micro and macro levels, and sectoral reviews of the role of social capital in rural development, water and sanitation delivery, and access to credit. An annotated bibliography is also available.

Table 2: Conceptual and Review Studies Commissioned by the SCI
CONCEPTUAL STUDIES
Social Capital and Poverty (Paul Collier)
Is Social Capital an Effective Smoke Condenser?: An Essay on a Concept Linking the Social Sciences (Martin Paldam and Gert Tinggaard Svendsen)
LITERATURE REVIEWS
Social Capital: The Missing Link? (Christiaan Grootaert)
Social Capital, Growth and Poverty: A Survey and Extensions (Stephen Knack)
Does Social Capital Facilitate the Poor's Access to Credit? A Review of the Microeconomic Literature (Thierry van Bastelaer)
Does Social Capital Matter in Water and Sanitation Delivery? A Review of Literature (Satu Kähkönen)
Social Capital and Rural Development: A Discussion of Issues (Casper Sorensen)
ANNOTATED BIBLIOGRAPHY
Social Capital: Conceptual Frameworks and Empirical Evidence: An Annotated Bibliography (Tine Rossing Feldman and Susan Assaf)

The Social Capital Initiative has now been completed. The findings of the research it supported have been made available in more than twenty working papers (see Annex 1), and are being bundled and synthesized in two forthcoming books. Results have been disseminated at several workshops and conferences. A set of practical measurement tools for social capital has been developed which have already been applied in World Bank operational activities. The Initiative has contributed to the development of a broader and more rigorous research agenda on the definition and relevance of social capital. It has also helped increase the visibility of the concept within development circles and its integration in project design.

The next section of this synthesis paper reviews key conceptual issues pertaining to social capital. Sections 3 and 4 summarize the findings of the empirical studies of the SCI. Section 5 presents the main lessons and recommendations relating to measurement and policy intervention, and discusses implications for the World Bank.

2. CONCEPTUAL FRAMEWORK: WHAT IS SOCIAL CAPITAL?

The social capital of a society includes the institutions, the relationships, the attitudes and values that govern interactions among people and contribute to economic and social development. The notion that social relations, networks, norms, and values matter in the functioning and development of society has long been present in the economics, sociology, anthropology, and political science literature. Only in the past 10 years or so, however, has the idea of social capital been put forth as a unifying concept embodying these multidisciplinary views. The concept has been greatly stimulated by the writings of scholars such as James Coleman (1988, 1990) and Robert Putnam (1993). They, and many other writers, have attempted to define social capital rigorously and to identify conceptually sound and practically useful bounds of the concept (see the reviews in Grootaert 1997, Portes 1998, Woolcock 1998, Narayan 1999, Serageldin and Grootaert 2000, Woolcock and Narayan 2000).

The Scope, Forms, and Channels of Social Capital

The concept of social capital can be viewed along three dimensions. They are its scope (or unit of observation), its forms (or manifestations), and the channels through which it affects development.

The Scope of Social Capital

Although there are distinct traces of the concept in earlier writings, the analysis of social capital at the micro level is usually associated with Robert Putnam (1993).[2] In his seminal book on civic associations in Italy, Putnam defines social capital as those features of social organization, such as networks of individuals or households, and the associated norms and values, that create externalities for the community as a whole. Putnam originally envisaged these externalities as being only of a positive nature, but he and others have since recognized that negative externalities can result from interpersonal interactions, as demonstrated by certain interests groups or, in extreme cases, malevolent groups such as the Mafia in Italy or the Interahamwe in Rwanda. In such situations, social capital benefits members of the association, but not necessarily nonmembers or the community at large.

By expanding the unit of observation and introducing a vertical component to social capital, James Coleman (1990) opened the door to a broader—or "meso"—interpretation of social capital. His definition of social capital as "a variety of different entities [which] all consist of some aspect of social structure, and [which] facilitate certain actions of actors—whether personal or corporate actors—within the structure"

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2 The words *social capital* were used with a different meaning by Alfred Marshall in 1890. Woolcock (1998) identifies Lydia Judson Hanifan (1920) and Jane Jacobs (1961) as the first proponents of the modern concept of social capital.

(p. 598) implicitly considers relations among groups, rather than individuals. This definition expands the concept to include vertical as well as horizontal associations and behavior within and among other entities, such as firms. Vertical associations are characterized by hierarchical relationships and an unequal power distribution among members.

The third and most encompassing view of social capital includes the social and political environment that shapes social structure and enables norms to develop. In addition to the largely informal, and often local, horizontal and hierarchical relationships of the first two concepts, this view also includes the macro-level most formalized institutional relationships and structures, such as the political regime, the rule of law, the court system, and civil and political liberties. This focus on institutions draws on the work of Douglass North (1990) and Mancur Olson (1982), who have argued that such institutions have a critical effect on the rate and pattern of economic development.

There is a strong degree of complementarity between horizontal and hierarchical associations and macro institutions, and their coexistence maximizes the impact of social capital on economic and social outcomes. For example, macro institutions can provide an enabling environment in which local associations can develop and flourish; local associations can sustain regional and national institutions and add a measure of stability to them. A certain degree of substitution is also inherent to the interlocking aspect of the three levels of social capital. For example, a strengthening of the rule of law that results in better-enforced contracts may render local interactions and reliance on reputations and informal ways of resolving conflict less critical to enterprise development. Although the resulting loosening of social ties at the local level would suggest that micro-level social capital has been weakened, this effect must be weighed against the counterbalancing effect at the national level.

The Forms of Social Capital

Whether at the micro, meso, or macro level, social capital exerts its influence on development as a result of the interactions between two distinct types of social capital—structural and cognitive. Structural social capital facilitates information sharing, and collective action and decisionmaking through established roles, social networks and other social structures supplemented by rules, procedures, and precedents. As such, it is a relatively objective and externally observable construct. Cognitive social capital refers to shared norms, values, trust, attitudes, and beliefs. It is therefore a more subjective and intangible concept (Uphoff 2000).

The two forms of social capital can be, but are not necessarily, complementary. Cooperation between neighbors can be based on a personal cognitive bond that may not be reflected in a formal structural arrangement. Similarly, the existence of a community association does not necessarily testify to strong personal connections among its members, either because participation in its activities is not voluntary or because its existence has outlasted the external factor that led to its creation. Social interaction can become capital through the persistence of its effects, which can be ensured at both the cognitive and structural level. For example, a sports association embodies the values and goals of the social interaction that initiated it, but the cognitive social capital created by the repeated social interaction can survive the end of the sports season and have lasting effects among, and even beyond, the original members.

The Channels of Social Capital

Any form of capital—material or nonmaterial— represents an asset or a class of assets that produces a stream of benefits. The stream of benefits from social capital—or the channels through which it affects development—includes several related elements, such as information sharing and mutually beneficial collective action and decisionmaking.

As part of the SCI's effort to provide a unifying conceptual background to its studies, Paul Collier has investigated the concept of social capital from an economic perspective.[3] He suggests that social capital is economically beneficial because social interaction generates at least one of three externalities. It facilitates the transmission of knowledge about the behavior of others and this reduces the problem of opportunism. It facilitates the transmission of knowledge about technology and markets and this reduces market failures in information. Finally, it reduces the problem of free riding and so facilitates collective action. Collier distinguishes between whether the social interaction is reciprocal or unidirectional; and whether it is organized or informal. For example, knowledge transmission may depend upon information pooling, which occurs through reciprocal interactions such as networks (informal) and clubs (organized), or upon copying, which only requires unidirectional interaction.

The implications of social capital for the poor can be expected to vary according to this typology. For example, the process of copying may be intrinsically equalizing, whereas networks may tend to exclude the poor because they have less knowledge to pool.

Several case studies of the SCI highlight the role of information sharing. The study of agricultural traders in Madagascar is a good example: better-connected traders have better information on prices and on the credibility of clients, and they enjoy larger sales and gross margins on their transactions as a result.[4]

In addition to acting as fora for information exchange, networks and associations facilitate collective action and decisionmaking by increasing the benefits of compliance with expected behavior or by increasing the costs of noncompliance. The SCI case studies document this channel of operation of social capital in a wide range of geographic and sectoral settings.

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3 Collier, P. (1998), "Social Capital and Poverty", Social Capital Initiative Working Paper No. 4.

4 Fafchamps, M. and B. Minten (1999), "Social Capital and the Firm: Evidence from Agricultural Trade", Social Capital Initiative Working Paper No. 17.

Is it Capital?

Social capital should ultimately be seen in the context of the contribution it makes to sustainable development. Sustainable development has been defined as a process whereby future generations receive as much or more capital per capita as the current generation has available (Serageldin 1996). Traditionally, this has included natural capital, physical or produced capital, and human capital as the wealth of nations on which economic development and growth are based. It is now recognized that these three types of capital determine only partially the process of economic growth because they overlook the way in which the economic actors interact and organize themselves to generate growth and development. The missing link is social capital (Grootaert 1997). At this broad level of conceptualization there is little disagreement about the relevance of social capital. There is, however, no consensus about which aspects of social interaction and organization merit the label of social capital, nor in fact about the validity of the term 'capital' to describe this.

Some academicians have questioned the use of the word 'capital' to capture the essence of social interactions and attitudes. Indeed, social capital exhibits a number of characteristics that distinguish it from other forms of capital. First, unlike physical capital, but like human capital, social capital can accumulate as a result of its use. Put differently, social capital is both an input into and an output of collective action. To the extent that social interactions are drawn on to produce a mutually beneficial output, the quantity or quality of these interactions is likely to increase. Second, although every other form of capital has a potential productive impact in a typical Robinson Crusoe economy, social capital doesn't (at least not until Friday emerges from the sea); creating and activating social capital requires at least two people. In other words, social capital has public good characteristics that have direct implications for the optimality of its production level. Like other public goods, it will tend to be underproduced because of incomplete collective internalization of the positive externalities inherent in its production.[5]

Social capital shares several attributes with other forms of capital, however. Foremost, it is not costless to produce, as it requires an investment—at least in terms of time and effort, if not always money—that can be significant. The trusting relationships among the members of a sports club or professional organization often require years of meeting and interacting to develop. As Putnam shows in his analysis of civic associations in Italy, embodied social capital can take generations to build and to become fully effective. And as the many examples of civil conflict around the world testify, trust

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[5] Where negative externalities are present (as in the case of crime syndicates), "too much" social capital will be generated relative to the social optimum (which presumably is zero for this example). We share the reluctance expressed by Uphoff and others to use the term "negative social capital" to describe social interactions and values used to increase inequity or decrease welfare. Using such a term is as nonsensical as describing an illegal gun factory as "negative physical capital". Expressions such as "damaging" or "harmful" social capital are more meaningful, as they imply an assessment of the effects of a certain kind of social capital.

is more easily destroyed than (re)built. Thus there is a distinct maintenance expense to social capital, usually in the form of time.

The key attribute of capital, however, is that it is an accumulated stock from which a stream of benefits flows. The view that social capital is an asset—that is, that it represents genuine capital—means that it is more than just a set of social organizations or social values. On the input side this additional dimension lies in the investment required to create a lasting asset; on the output side it lies in the resulting ability to generate a stream of benefits. The SCI case studies—and the empirical literature elsewhere—document that social capital can directly enhance output and lead to higher productivity of other resources, such as human and physical capital.

A word of caution is in order, however. There could be a temptation to extend the concept of social capital too broadly, turning it into a catch-all category designed to capture any asset that does not fall under the conventional categories of natural, physical, and human capital. A concept that encompasses too much is at risk of explaining nothing. The challenge for research, therefore, is to give meaningful and pragmatic content to the rich notion of social capital in each context and to define and measure suitable indicators.

To do this successfully requires an interdisciplinary approach which attempts to bridge some of the current different disciplinary perspectives on social capital. Political scientists, sociologists, and anthropologists tend to approach the concept of social capital through analysis of norms, networks, and organizations. Economists, on the other hand, tend to approach the concept through the analysis of contracts and institutions, and their impacts on the incentives for rational actors to engage in investments and transactions. Each of these views has merits and the challenge is to take advantage of the complementarities of the different approaches.

Social Capital: From Concept to Measurement

All of the studies reviewed in the next section, which examines the impact of social capital on development, view social capital as an asset that can be accumulated and that yields a flow of benefits. The nature of these benefits can differ. In Krishna and Uphoff's analysis of the watersheds in Rajasthan, the benefit is collective action to manage a common resource effectively. In Fafchamps and Minten's observation of traders in Madagascar, social capital reduces transactions costs and acts as an informal channel for acquiring insurance against liquidity risk. Reid and Salmen find that, in Mali, trust is the key factor in making agricultural extension successful. In Isham and Kähkönen's study of water projects in Indonesia, social capital increases the ability of villagers to organize to design and manage water supply systems. Pargal, Huq and Gilligan's study of solid waste removal in urban neighborhoods in Bangladesh finds a similar organizational benefit. Rose finds that, in Russia, social capital networks are the most important source of income security. These case studies make it clear that the benefits from the stock of social capital can flow either to communities or to individuals and households.[6]

Like human capital, social capital is difficult, if not impossible, to measure directly; for empirical purposes the use of proxy indicators is necessary. Years of education and years of work experience have a long tradition as proxies for human capital and have proven their value in numerous empirical studies. No such acquired consensus yet exists for the study of social capital, and the search for the best proxy indicator continues. The SCI aimed to make a contribution in this critical area. The measurement challenge is to identify a contextually relevant indicator of social capital and to establish an empirical correlation with relevant benefit indicators. As the SCI studies demonstrate, these social capital indicators differ both geographically and sectorally. For example, measures of membership in associations were found to be a relevant indicator in Indonesia, Kenya, and countries of the Andean region, but not in India and Russia, where informal networks are more important. Thus, the selection of the proxy variables in the case studies was inspired by the specific manifestations of social capital in the study area, or the specific vehicles (associations, social networks) through which social capital is acquired.

Krishna and Uphoff rely primarily on membership in networks as a measure of structural social capital. Fafchamps and Minten use the number and types of relations among traders as their main indicator. Reid and Salmen use indicators of trust between farmers and extension agents. Isham and Kähkönen measure the prevalence of social networks and the patterns of social interaction among water users. They construct variables capturing the density of membership in water users associations, the extent of meeting attendance and participation in decisionmaking in these associations, the extent of social interaction among neighbors, and the number of collective village activities. To try to measure the cognitive dimension of social capital, they construct a neighborhood trust index. Pargal, Huq and Gilligan also use a combination of indicators for structural and cognitive social capital. Structural social capital is proxied by associational activity; cognitive social capital is proxied by measures of trust and the strength of norms of reciprocity and sharing. Lastly, Rose uses measures of trust in other people and in institutions, and indicators of belonging to networks, including having someone in the family who is or was a member of the Communist Party.

The choice of indicators to measure social capital is also guided by the scope of the concept and the breadth of the unit of observation used. The studies reviewed in section 4 of the paper demonstrate how measurement proxies of social capital can be tailored to the unit of measurement. This ranges from within-community local groups to supra-community federations and to national-level entities. At one end of this spectrum,

[6] This issue is related to—but nevertheless distinct from—the question of collective versus individual ownership of social capital. Both positions have been advanced in the literature, with Putnam (1993) perhaps the most noted proponent of the view that social capital is a collective asset. Others, such as Portes (1998), suggest that social capital may well be individually owned, although they acknowledge that the creation of social capital requires interaction between at least two individuals. Thus the process of asset creation should be distinguished from its ultimate ownership.

Gugerty and Kremer study the impact of NGO funding on social capital formation in rural women's groups and primary schools in western Kenya. In the case of women's groups, social capital is measured by the organizational structure of the groups, their mutual assistance activities, and the extent of external ties. In the context of schools, social capital is reflected in parental attendance at school meetings, the level of cooperation among teachers, and the interaction between school and government, as indicated by the number of visits to the school by local educational officials.

Bebbington and Carroll use a broader unit of measurement in their study of poor people's organizations in the Andes of Bolivia, Ecuador, and Peru. They examine the role of indigenous supracommunal federations in organizing community-based groups around shared economic, political, or cultural interests. To describe the social capital in these federations, they examine five types of variables. Internal relations are captured by measures of neighbor- or kin-based networks and intercommunity networks within the federation. External relations are captured by indicators of the links with higher-tier indigenous organizations, municipal and regional organizations, and support agencies. In Pantoja's study of coal mining areas of Orissa, India, the analysis is multi-unit, comprising the mining company, the concerned communities, and their civil society organizations. Thus, the social capital variables span a wide range: family and kinship connections, associational life, cross-network linkages, civil society-state interactions, and the macro-level institutional framework as it affects the study area.

At the other end of the spectrum, the studies by Colletta and Cullen and by Bates examine the role of social capital in leading to, or preventing, ethnic conflict. They focus on the macro dimension of social capital and rely on national-level indicators, such as the ethnic composition of the population, and indicators of conflict and governance. These indicators are used either at the village level for case studies or at the national level for cross-country comparison and analysis.

Clearly, a wide range of social capital indicators are available and have been used in the SCI studies to measure social capital and its impact. Each of those measures has merits in the specific context in which it was used. Due to the strong contextual nature of social capital, it is unlikely that it will ever be possible to identify a few "best" indicators that can be used everywhere. However, in Section 5 we summarize the lessons learned with the social capital indicators and suggest three broad classes of indicators which can usefully underlie the quantitative analysis of social capital.

3. EMPIRICAL EVIDENCE: THE IMPACT OF SOCIAL CAPITAL ON DEVELOPMENT

Six SCI studies (see Table 1) provide concrete evidence of the impact of social capital on development. They indicate that social capital contributes directly to raising income and improves access to services not otherwise available. Four studies pertain to rural areas, one to urban areas, and one is country-wide.

The Micro/Meso-Level Evidence

Krishna and Uphoff's study describes how farmers address the critical problem of managing watersheds, which requires collaboration.[7] The authors isolate the social factors that account for the degree of success observed in 64 villages in the Indian state of Rajasthan. They develop a social capital index that combines an equal number of structural and cognitive factors representative of the social environment in the region (informal networks, established roles, solidarity, mutual trust). They then show that this index, along with political competition and literacy, has a significant and positive association with both watershed management and broader development outcomes. They also find that demographic characteristics and household attributes, such as education, wealth, and social status, are not systematically associated with the level of social capital within households. In contrast, several community attributes reflecting participation and experience in dealing with community problems positively affect the social capital index. However, the largest increments in social capital occur where beliefs in participation are reinforced by the existence of rules that are clear and fairly implemented. This is a good example of the mutually reinforcing role of structural and cognitive social capital.

The case study by Fafchamps and Minten suggests that cognitive social capital—in the form of trust emanating from personal contacts—can increase incomes of agricultural traders and their families.[8] The authors show that traders in Madagascar rank relationships higher than input prices, output prices, and access to credit or equipment in terms of their importance for success in business. Better-connected traders enjoy significantly higher sales and gross margins than less well-connected traders, after controlling for physical and human inputs as well as entrepreneurial characteristics. This social capital enables traders to conduct business with one another in a more trusting manner, thereby reducing the costs of securing and providing credit, finding reliable price information, and carrying out quality inspections. Traders who do not develop the appropriate social capital do not expand their businesses. The authors argue that social capital embodied in networks of trust has characteristics similar to other factors of

[7] Krishna, A. and N. Uphoff (1999), "Mapping and Measuring Social Capital: A Conceptual and Empirical Study of Collective Action for Conserving and Developing Watersheds in Rajasthan, India", Social Capital Initiative Working Paper No. 13.

[8] Fafchamps, M. and B. Minten (1999), "Social Capital and the Firm: Evidence from Agricultural Trade," Social Capital Initiative Working Paper No. 17.

production, such as physical capital and labor. Like these inputs, social capital is accumulated over time and improves economic performance.

A central element of cognitive social capital is interpersonal trust. The case study by Reid and Salmen finds that trust is a key determinant of the success of agricultural extension in Mali.[9] The study identified three equally important aspects of trust: the quality of the relationship among farmers, trust between farmers and extension workers, and the relationship between extension workers and their national organizations. Women and their associations were found to be consistent diffusers of information and technology, and able to tap into and generate social capital. The study also documented the importance of pre-existing social cohesion. The predisposition of villagers to attend association meetings, to gather in places of worship, and to build and maintain public infrastructure creates the fertile ground for external inputs such as agricultural extension to take root.

The practical implication is that extension workers and development agencies in general need to gain an operationally relevant understanding of the social and institutional fabric in places where they work. Agents need to be trained to enhance this local context so that villagers become more receptive to new agricultural techniques and methods. Thus, development projects should not be designed so that they deal with all communities uniformly, but be adapted to different levels of existing social capital.

In addition to directly enhancing the main source of livelihood of rural farmers or traders, social capital helps the poor in both rural and urban settings by increasing access to goods and services, in particular those that exhibit public good characteristics. Two SCI case studies seek to identify the role played by social capital in the community-based provision of services, specifically, water supply and waste collection. Because these activities involve positive externalities, incentives for individual action are limited and the activities are underprovided. The studies suggest that social capital can help internalize these externalities and provide incentives for collective action.

Isham and Kähkönen examine community-based water services in the Central Java province of Indonesia and analyze why some services have succeeded there while others have failed.[10] The answer depends on the extent to which the demand-responsive approach embedded in community-based projects was actually implemented. In villages with high levels of social capital—in particular villages with active groups and associations—household participation in design is likely to be high and monitoring mechanisms are more likely to be in place. In those villages, households are accustomed to working together, and social ties deter free-riding. This is especially important in the case of piped water systems, whose design and monitoring are more dependent on

[9] Reid, C. and L. Salmen (2000), "Understanding Social Capital. Agricultural Extension in Mali: Trust and Social Cohesion", Social Capital Initiative Working Paper No. 22.

[10] Isham, J. and S. Kähkönen (1999), "What Determines the Effectiveness of Community-Based Water Projects? Evidence from Central Java, Indonesia on Demand Responsiveness, Service Rules, and Social Capital", Social Capital Initiative Working Paper No. 14.

collective action. In villages selecting piped systems, high social capital led to more favorable impacts at the household level.

Two lessons emerge from this study. First, the type of water delivery system most appropriate for a given community should be a function of the level of social capital in the community, as different technologies require different levels of collective action. Second, the type of institution embodying social capital matters. In some villages, water users committees proved to be the best channel through which to coordinate use and maintenance of the water system; in others the mere presence of a water committee did not lead to improved performance, and the key to success lies in other institutional arrangements.

Waste collection services are rarely provided adequately by municipalities in developing countries. In response, some neighborhoods choose to undertake collection themselves. The case study by Pargal, Huq, and Gilligan explores the characteristics of those neighborhoods in Dhaka, Bangladesh, in which the community successfully organized voluntary waste management services.[11] The authors develop measures of trust and norms of reciprocity and sharing among neighborhood residents as proxies for cognitive social capital; they use indicators of associational activity to estimate structural social capital. Their analysis shows that these variables have a large and significant impact on the probability that a neighborhood will organize for refuse collection. Homogeneity of interests and points of view as well as education levels also increase the likelihood of collective action. While the analysis suggests a coproductive role for the government, it does not indicate that policymakers can easily affect the level of social capital. Rather, the authors argue, the study's main policy implication is that the introduction of public-private partnerships or self-help schemes is more likely to be successful in neighborhoods with high levels of social capital. Thus social capital proxies or determinants can be used as predictors of success when targeting neighborhoods for social or public goods interventions.

A final case study in this section looks at the extent households and communities draw upon their social capital to compensate for a failing central state.[12] In the former Soviet Union, organizational failures often happen in the bureaucratic delivery of non-market goods and services, such as safety, housing, education, health and income maintenance. The study by Rose examines the results of a nationwide social capital survey in Russia and finds that the vast majority of households have developed alternative means to secure access to these goods and services. Although there is no universal pattern in the creation and use of these means, most tactics combine relying on informal social networks, cajoling public officials, using connections to bend rules or

[11] Pargal, S., M. Huq, and D. Gilligan (1999), "Social Capital in Solid Waste Management: Evidence from Dhaka, Bangladesh", Social Capital Initiative Working Paper No. 16.

[12] R. Rose (1998), "Getting Things Done in an Anti-Modern Society: Social Capital Networks in Russia", Social Capital Initiative Working Paper No. 6.

R. Rose (1999), "What Does Social Capital Add to Individual Welfare", Social Capital Initiative Working Paper No. 15.

paying bribes that break rules. Several personal characteristics, such as education, age and extent of past social integration, account for the differences in strategies that households use to access goods and services. The strategy also depends on the type of goods or services to be secured. Personal attributes, especially gender, matter more in securing access to food and health services, but social capital networks are the predominant source of income security in Russia today.

The author argues that these informal networks are not the result of popular demand, but a survival mechanism to cope with a dysfunctional state where officials at all levels are implicated. Hence, the immediate need is not to change the values and attitudes of the mass of the population, but to change the way the country is governed. A first step is to reduce the number of regulations that create opportunities for rent-seeking and bribery within agencies responsible for allocating goods and services. A second step calls for the reform of public sector organizations that reward individuals for using social capital against the modern state.

In summary, the six Social Capital Initiative studies reviewed so far indicate that greater local social capital results in direct income gains and more widespread and efficient delivery of services. The impact of social capital is manifested through improved exchange of information (about technology or creditworthiness of contract parties), higher participation in design, implementation and monitoring of service delivery systems, and more effective collective action. The magnitude of the social capital effect differs from setting to setting, but in several analyses where comparable quantitative measurements were possible, the social capital effect on outcomes proved to be as or more important than the effect from other assets such as human and physical capital.[13] Qualitative analysis, such as the case study in Mali, documented likewise that the presence of cognitive social capital (trust) can be as or more important than the human capital (technical skills) of development workers.[14]

The Macro-Level Evidence

The SCI studies discussed so far estimated the impact of social capital at the micro or meso level. It did not prove feasible within the time and resource constraints of the SCI to undertake new data collection on social capital at the macro level. However, there exists already a large body of evidence on the role of macro-level social capital on economic performance and the SCI commissioned a review of this evidence.[15] Knack's review highlights the impact of legal mechanisms for enforcing contracts and protecting

[13] A comparative study of the impact of membership in local associations on household welfare in Bolivia, Burkina Faso, and Indonesia also found that the effect of local social capital was greater than that of human capital (Grootaert 2001).

[14] This result is similar to that reported in Tendler's (1997) well known study of health service delivery in Ceara, Brazil, where trust between government agents and intended beneficiaries was the key to success.

[15] Knack, S. (1999), "Social Capital, Growth and Poverty: A Survey and Extensions", Social Capital Initiative Working Paper No. 7.

personal and property rights as well as informal mechanisms (common values, norms, informal networks, associational memberships) that can complement or substitute for legal mechanisms. Most empirical studies of macro-level social capital rely on econometric cross-country analyses whereby indicators of economic performance (GDP growth, investment) are regressed on conventional growth determinants and measures of social capital. The majority of studies find that the latter are important determinants of economic outcomes at the macro level. Among the most important variables identified by these studies are civil and political liberties, political stability and the absence of political violence, and measures of contract enforcement, expropriation risk, corruption and the quality of government bureaucracy. The major weakness of these studies is that the direction of causality is not always clear: arguably, economic growth also promotes civil liberties and political stability.

Some cross-sectional studies also included variables such as the density of civic associations and country-level measures of generalized trust and social cohesion. These are national-level equivalents of the type of measures of structural and cognitive social capital typically used at the micro/meso level, as e.g. in the six SCI studies discussed earlier. Most studies found that trust is positively associated with economic growth, but the results relating to associational membership are non-conclusive. Several studies also showed that social divisiveness in society can have a cost in terms of reduced growth performance, but the relation is obviously complex and there are competing hypotheses about the transmission channel that produces the effect.

On balance, Knack argues that, although each individual measure of macro-level social capital suffers from some shortcomings, taken together the body of literature points to a significant and positive effect of social capital on economic growth. Knack also presents new empirical results, which indicate that the impact of social capital is progressive: higher levels of social capital are associated with subsequent improvements in the distribution of income. He hence suggests that the micro-level evidence gathered by the SCI is consistent with the results from the macro-level comparative studies.

4. EMPIRICAL EVIDENCE: THE CREATION AND DESTRUCTION OF SOCIAL CAPITAL

Five SCI case studies (see Table 1) focused on the process by which social capital accumulates or decreases and on determining whether this process can be affected by donor interventions and policy.

Gugerty and Kremer's study analyzes the results of an unusual experiment of randomized aid allocation by an NGO in Kenya.[16] Women's community groups and community primary schools were divided into sets of comparable groups, among which aid was randomly allocated. The advantage of randomization is that it avoids the usual problems of endogeneity and self-selection in assessing program impacts (that is, the fact that groups with more social capital obtain more funding). In the case of the women's groups, the authors find that over the study's time horizon of one year (a relatively short time in which to build social capital), funding had only a weak effect on social capital formation, mainly through improved links with outside organizations. In the case of the primary schools, the mechanism chosen to distribute assistance affected its outcome. Schools that received in-kind assistance (in the form of free textbooks) reported positive effects on school social capital as measured by attendance at school meetings, but other forms of parent participation declined. In contrast, in schools that received financial assistance, participation increased (mainly at meetings to decide how to use the funds), but there were few other effects. This experiment suggests to the authors that social capital is not easily created: assistance specifically designed to strengthen cooperation and participation appears to have had very limited effects in the short run.

In another case study, Bebbington and Carroll reach more encouraging conclusions about the possibility of creating specific forms of structural social capital.[17] The Andean federations (in Bolivia, Ecuador, Peru) they study are supracommunal organizations linking community-based groups around shared economic, political, or cultural interests. Their importance stems from their ability to transcend the limits of strictly local groups and to forge ties with otherwise distant regional and national institutions. The role and functioning of these organizations can be properly understood only if a clear distinction is made between internal and external relations. Bonding, or integrating, relationships take place within the group and facilitate interaction and collective action within it. Bridging, or linking, relationships strengthen linkages between the group and other organizations. These external relationships are also a critical element in stimulating this type of social capital by third parties, such as NGOs or the government.

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[16] Gugerty, M.K. and M. Kremer (2000), "Does Development Assistance Help Build Social Capital?" Social Capital Initiative Working Paper No. 20.

[17] Bebbington, A. and T. Carroll (2000), "Induced Social Capital and Federations of the Rural Poor", Social Capital Initiative Working Paper No. 19.

On the basis of detailed case studies and the results of a larger survey, the authors find that the strength and quality of social capital varies considerably among different organizations but that those with strong social capital have contributed to more inclusive forms of municipal governance, helped build local negotiating capacity and linkages with product and input markets, and in some cases fostered cultural revitalization. The study also concludes that federations constitute an important form of social capital that can be induced and reinforced by purposeful external intervention. The requisite strategy involves building on existing or latent social resources, and finding incentives of common interest. The key to success is the simultaneous strengthening of the internal capacity of the federations and the forging of effective links with external actors (government, churches, NGOs).

The case study by Pantoja looks at the role of social capital in the context of the rehabilitation of coal mining areas in Orissa, India.[18] One objective of the rehabilitation was to enhance the mining company's ability to deal effectively with social issues, including community development. The study found that different forms of social capital (family and kinship, intra-community and inter-community) interact to produce a mixture of positive and negative results for the rehabilitation process. The same strong ties that help members of a group to work together are also useful to exclude other community members from the benefits of collective action. Although mutual trust exists in abundance around the mining sites, it is highly fragmented by gender, caste and class, and results in closed groups with high entry costs and a considerable lack of horizontal linkages. Networks are used to exclude parts of the community that have been traditionally disadvantaged, and thus perpetuate existing divisions and power structures.

Moreover, within the context of a development project such as open coal mining, with high social and environmental impacts, social capital may have a different connotation depending on the stakeholder. For example, the firm which needs to relocate may see increased social capital levels as a hindrance rather than as something positive that should be supported, especially if it results in greater bargaining power for the community (or at least for some of its members).

The practical conclusion is that lack of social cohesion in the study villages is a major impediment to community involvement in the rehabilitation process and to community-based development in general. The standard approach of community consultation assumes that there exist groups which can fully represent the community—an assumption found erroneous in this study. Instead, the study found that social capital is not inherently beneficial to all members of the community. Furthermore, horizontal forms of social capital are important, but without proper vertical articulations, the impact of community development efforts are limited. External agents can help in facilitating the creation of social capital, but their presence can create dependency on the part of the community. The author argues that building social capital through community development requires triggering a process of social reorganization. This process can start

[18] Pantoja, E. (2000), "Exploring the Concept of Social Capital and its Relevance for Community-based Development: The Case of Coal Mining Areas in Orissa, India", Social Capital Initiative Working Paper No. 18.

by promoting the creation of small groups within existing social solidarities. To avoid exacerbating social cleavages, horizontal linkages across these groups should be facilitated, and vertical links with state and private organizations purposely sought. This process of transformation will not occur exclusively from within the community. External actors such as NGOs need to assist, but with the objective to make themselves redundant in a reasonable period of time.

The last two SCI studies move the analysis to the macro level by focusing on the ability of social capital to prevent, or promote, political conflict and change. Colletta and Cullen examine how the genocide in Cambodia and Rwanda destroyed social capital and how it is being rebuilt after the end of hostilities.[19] The distinction between bonding and bridging social capital constitutes the framework for the study. This dimension interacts with the horizontal/vertical aspects of social capital. Horizontal social capital is measured by indicators of trust and crosscutting networks (the existence of informal associations, the extent of intermarriage and mutual aid); vertical social capital is measured by such factors as state and market penetration at the local level. High levels of social cohesion occur where vertical social capital is strong, as reflected in an open, accountable relationship between the state and individuals and communities, and where bridging social capital predominates. Such a society will be inclusive and law abiding and will have open media and a non-corrupt government. In contrast, weak vertical links combined with strong bonding social capital (dominated by kin-based or ethnic links) will lead to low levels of social cohesion. The society will be marked by exclusion, inequity, and oppression. Colletta and Cullen describe just such a situation in Cambodia and Rwanda, where the result was genocide.

The authors find that in Cambodia, postconflict forms of social capital do not differ markedly from those that existed before hostilities began. Bonding social capital of a familial nature endured during the conflict, providing a basic survival-oriented safety net. In contrast, many associations with professional or developmental objectives, such as rice banks, funeral associations, and water users groups, withered during wartime but began to increase in number and intensity as the conflict receded.

Analysis of the genocide in Rwanda shows the ambiguous effects that bonding social capital can have in situations of extreme social stress. On the one hand, bonding social capital within families proved critical for survival and led to courageous attempts to save lives or rescue persecuted people. On the other hand, strong and exclusionary social capital emerged within Hutu extremism, resulting in a higher number of killings. The various associations (cooperatives, rotating saving and credit associations, churches) that existed in Rwanda before the genocide and that could have been a source of bridging social capital proved to be insufficiently inclusive to provide a counterweight to the politics of hate during the conflict. The genocide destroyed these associations; those that have re-emerged since the end of the conflict are very different from those that existed

[19] Colletta, N.J. and M. Cullen (2000), “The Nexus between Violent Conflict, Social Capital and Social Cohesion: Case Studies from Cambodia and Rwanda”, Social Capital Initiative Working Paper No. 23.

before. For example, the low level of trust remaining after the war negatively affected the re-creation of relationships based on credit or reciprocal gift giving.

In the final study, Bates studies the challenges facing states in Sub-Saharan Africa as they try to address the issue of ethnic politics by establishing appropriate governance structures.[20] The challenge they face flows from the double role of ethnicity. On the one hand, ethnicity offers incentives that organize the flow of resources across generations and provides the capital for urban migration and the acquisition of skills for industrial employment. On the other hand, ethnic tensions can lead to costly acts of violence. Using data from Africa, Bates explores both faces of ethnicity. He finds that the presumed link between ethnicity and violence is more complex and less threatening than most people assume. Specifically, he finds that as the size of the largest ethnic group in a country increases, the odds of protest increase initially, but the odds of violence decrease. When the size of that group enters a "danger zone" of 40–50 percent of the population, the opposite pattern occurs. Based on these results, Bates argues that common political prescriptions such as winner-takes-all elections are counterproductive, since they carry with them the risk of permanent exclusion of minority group interests. Similarly, the creation of ethnically homogeneous regional political units can be dangerous if they replicate "danger zones" of ethnic dominance at the local level.

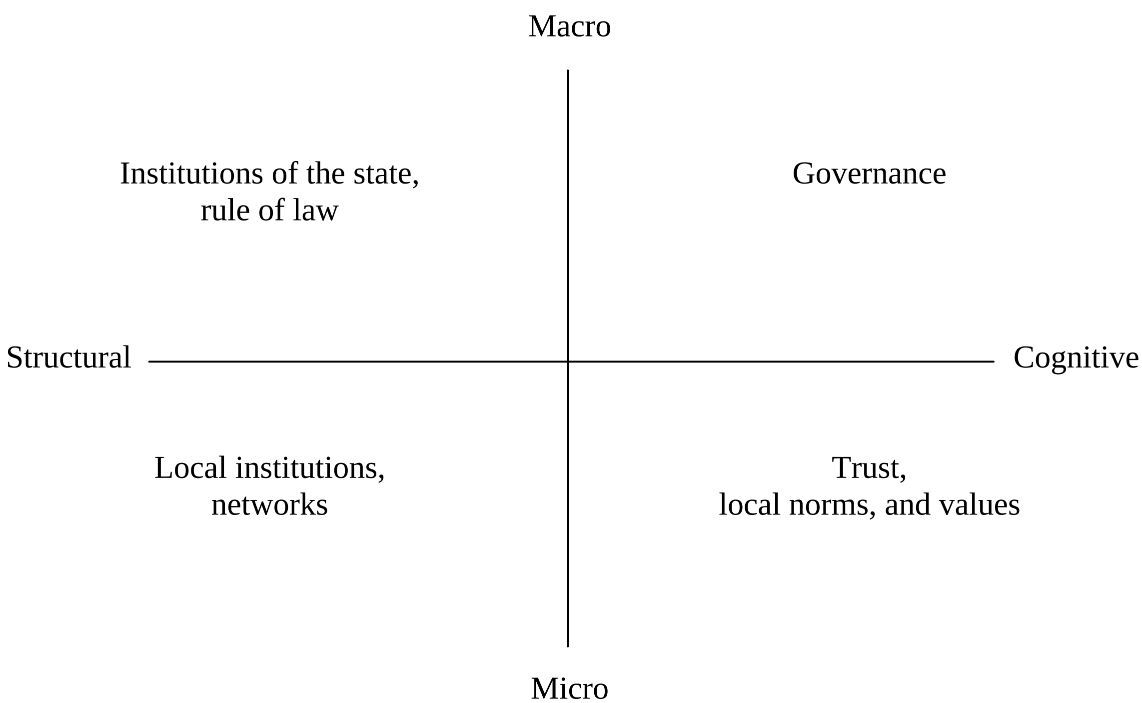
Several lessons can be drawn from the five SCI studies discussed in this section. First, there is clear evidence that social capital can be destroyed (often rapidly) and rebuilt (usually slowly). The rebuilding process is not costless: often significant investments of time and resources are needed. A low social capital society is characterized by social divisiveness and distrust, which carry an economic cost as well. The evidence on accumulation and decumulation of social capital adds to the case for considering social capital as a genuine type of capital. Second, several studies highlight the potentially perverse effects of social capital. Vertical (hierarchical) social capital is much more likely to lead to negative outcomes than horizontal social capital. Likewise, bonding social capital, especially along ethnic lines, can have mixed outcomes: it can be a critical survival mechanism in times of economic stress, but it can also be used to exclude others from the benefits of collective action, and in some cases it can exacerbate conflict and violence. Third, it is not easy for external agents to contribute to the process of building social capital. Providing external funds to groups or associations may have mixed effects on internal social capital, although it can contribute to building external linkages. Based on the limited range of situations of external support covered by the SCI studies, it appears that there is some scope for donors or NGOs to build bridging social capital, especially in a well-defined structural setting (such as supra-communal organizations). External support can also contribute to reforming governmental institutions in a way to provide a more conducive environment for local social capital to develop.

[20] Bates, R. (1999), "Ethnicity, Capital Formation, and Conflict", Social Capital Initiative Working Paper No. 12.

5. CONCLUSIONS AND RECOMMENDATIONS

A general framework for thinking about social capital and for relating it to development is beginning to emerge. As reviewed in Section 2, the framework is built around two key dimensions of social capital: its scope (micro, meso, and macro) and its forms (cognitive and structural) (Figure 1).[21] The framework treats social capital as a genuine asset that requires investment to accumulate and that generates a stream of benefits.

Figure 1. Dimensions of Social Capital



The ideal approach to measuring social capital would embody all four quadrants of figure 1. In practice, the state of the art has not advanced to that stage. The majority of the SCI studies focused on one or two of these quadrants. Most studies are situated at the micro level and focus on institutions or norms that are relevant for households, villages, and communities. Most SCI studies tried to incorporate aspects of both structural and cognitive social capital, although measurement is often more advanced for structural social capital. Indicators that formally capture both structural and cognitive

[21] A third dimension is based on the distinction between bonding, bridging, and linking social capital. This dimension is explored further in Woolcock and Narayan (2000), and was used in the SCI case studies on the supra-community organizations in the Andes and the genocide in Cambodia and Rwanda (see Section 4).

social capital are found in Krishna and Uphoff's study of watersheds in India, Isham and Kähkönen's analysis of water supply systems in Indonesia, Pargal, Huq, and Gilligan's study of waste management in urban neighborhoods in Bangladesh, and Rose's study of networks in Russia.

Two questions arise naturally from the SCI studies. First, how much progress have we made in measuring social capital and its impact? Have we learned enough to conclude that measuring social capital is realistic, that social capital can be measured as successfully as natural, physical, and human capital? If social capital can be measured, what problems remain in measuring it, and what are the priorities for future research?

The second question concerns policy recommendations. The fact that *social capital* is called *capital* suggests that one can invest in it, just as one can invest in human and physical capital. Is this the case, and if so, how is it to be done? Which actors are involved in such investment—the state, the private sector, civil society, households, or individuals?

Measuring Social Capital and Its Impacts

The overriding lesson that emerges from the SCI is that it is possible to measure social capital and its impact. The empirical studies indicate that social capital has a profound impact in many different areas of human life and development: it affects the provision of services in both urban and rural areas; transforms the prospects for agricultural development; influences the expansion of private enterprises; improves the management of common resources; helps improve education; can prevent conflict; and can compensate for a deficient state. More generally, it helps alleviate poverty for individuals and for countries as a whole. Lest this sound excessively simplistic or overly generalized, we note that the extent to which social capital matters varies tremendously across settings, as do the aspects of social capital that are effective.

We cannot help but be impressed by the consistency of these findings across both the quantitative and the qualitative studies. Methodological diversity is both a strength and a challenge of research on social capital. The analysis cannot be conducted strictly within the economic paradigm, using quantitative methods. Nor can it be investigated solely through anthropological or sociological case studies. The SCI studies convincingly illustrate the need for and importance of this methodological diversity. Some studies—such as Fafchamps and Minten's analysis of traders in Madagascar and Pargal, Huq, and Gilligan's study of waste management services in Dhaka—rely almost solely on rigorous econometric methods to measure the role of social capital. Other studies, such as Bebbington and Carroll's investigation of farmer federations in the Andes and Colletta and Cullen's study of civil conflict in Rwanda and Cambodia are based only on case studies. The strength of the quantitative studies is that they can determine a confidence interval within which the results hold. As they are usually based on representative data sources, they can say more about the geographic area or the groups of people for which these results are valid than can case studies. The case studies excel at investigating the in-depth causal processes that lead to certain outcomes, although they often must leave open questions about the statistical validity of the results. Of course, this interplay and complementarity between quantitative and qualitative methods is not limited to the study of social capital. If anything is unique about the analysis of social capital, it is perhaps the high degree to which it is essential to draw on both methods and multidisciplinary approaches to reach valid conclusions.

The SCI studies are, we believe, an adequate rebuttal to those who have argued that too much conceptual diffusion (and perhaps confusion) about social capital remains, and that measurement efforts should wait until further conceptual clarity and convergence has been achieved. We do not accept this point of view. Instead, from the variety of concepts and approaches available, we chose those that we believe lend themselves to pragmatic approaches. The lessons learned from measuring social capital have provided useful insights for the conceptual debate. Specifically, the SCI results show that the conceptual debate must steer away from viewing different concepts of social capital as alternatives. They show that both cognitive and structural capital matter and that social capital is a relevant concept at both the micro and macro levels. We firmly believe that the way forward is to pursue further the integrating view on defining and measuring social capital. Still, we must recognize that progress has not been the same in each of the four quadrants of Figure 1. Most progress has been made in measuring the impact of structural social capital at the micro level. We are perhaps farthest away from reaching the measurement goal in the upper right–hand quadrant, in which cognitive social capital is measured at the macro level.

When the results of the SCI studies were presented at a conference at the World Bank in June 1999, some commentators voiced skepticism about the measurement exercise on the grounds that social capital really refers to an underlying social force that eludes measurement and that the various measures used in the studies were at best imperfect proxies. There is some validity to this point of view. Indeed, one must be careful not to equate the measurement variables with the underlying social capital. However, the fact that proxy indicators are being used to measure social capital does not, in our view, detract from the validity of the exercise. Human capital provides a useful analogy. Human capital theory, developed some 40 years ago, claims that human capital embodied in individuals increases their ability to earn income over their lifetimes. Two convenient proxies were proposed to measure this ability: years of schooling and years of work experience. No one confused these proxy indicators with human capital per se. Rather, the proxies are input measures that measure the two most important ways in which human capital is acquired. Even 40 years after the development of the human capital model, measuring human capital directly (through performance or aptitude tests) remains very difficult. But this difficulty has not prevented the empirical literature on human capital from blossoming and leading to many extremely useful results for developing and implementing education policy.

The social capital model may currently be at the same early stage that human capital theory was 30–40 years ago. Several useful proxies have been identified for measuring social capital in a policy-relevant manner. The SCI case studies demonstrate the usefulness of such proxies. The challenge is to test these and other proxy measures in further empirical work, in order to build a strong case for their general applicability.

Experience with the multitude of social capital indicators in the case studies suggests that the focus should be on three types of proxy indicators: membership in local associations and networks, indicators of trust and adherence to norms, and an indicator of collective action:

- *Membership in local associations and networks.* Using membership in local associations as an indicator of structural social capital consists of counting the associations and their members and measuring various aspects of membership (such as internal heterogeneity) and institutional functioning (such as the extent of democratic decisionmaking). Which associations to include in the indicators is culture specific: agrarian syndicates could be relevant in one country, rotating credit and savings associations in another, parent-teacher associations in yet another. In the case of networks, which are less formal, the key information is the scope of the network and the internal diversity of membership. Indicators of membership in associations and networks proved of key importance in the studies of watershed management in India, access to water systems in Indonesia, solid waste collection in Bangladesh, primary schools in Kenya, access to services in Russia, and civil conflict in Cambodia and Rwanda.

- *Indicators of trust and adherence to norms.* Measuring trust and adherence to norms (cognitive social capital) requires asking respondents about their expectations about and experiences with behavior requiring trust. Key questions relate to the extent to which households received or would receive assistance from members of their community or network in case of various emergencies (loss of income, illness). Questions of this type were included in the data collection instruments of several SCI studies. The measurement of trust was critical for the studies of traders in Madagascar, agricultural extension in Mali, and the civil conflict in Cambodia and Rwanda.

- *An indicator of collective action.* The provision of many services requires collective action by a group of individuals. The extent to which this collective action occurs can be measured and is an indicator of underlying social cohesion (at least to the extent that the cooperation is not imposed by an external force, such as the government). Several SCI studies successfully used such measures, including the studies on watershed management in India, water supply in Indonesia, and solid waste removal in Bangladesh.

As proxies, these three types of indicators measure social capital from different vantage points. Membership in local associations and networks is clearly an input indicator, since the associations and networks are the vehicles through which social capital can be acquired. This indicator resembles perhaps most closely the use of years of schooling as a proxy for human capital. Trust can be seen as an input or output indicator or even as a direct measure of social capital, depending on one's conceptual approach. Collective action is clearly an output indicator. Because of their different perspectives, we believe that these three types of indicators, taken together, provide a valid basis for the measurement of social capital and its impacts. The indicators are relevant primarily at the micro and meso level, although some can be aggregated at the regional or national level.

These three sets of indicators provide a helpful framework for designing a measurement instrument. Of course, the exact questions and indicators for each analysis have to be adjusted to each social, economic, and cultural setting. The data collection instruments used in the SCI studies provide many examples. The questionnaires have yielded lessons as to which types of questions work well or poorly in the field and yield or fail to yield useful information for analysis. Analysts and practitioners have expressed a demand to see these lessons brought together in a prototype data collection instrument, so that subsequent analysis can build upon the experiences of others. To that effect, the Social Capital Assessment Tool was designed by bringing together the best questions from all the SCI studies and from selected other studies on social capital as well. The tool has been field tested successfully in Panama and India, where it proved to be a valid basis for deriving indicators of institutional membership, trust and adherence to norms, and collective action.[22] The existence of the Social Capital Assessment Tool is not meant to obviate the need for local adaptation of data collection but to embody the experience of past empirical research in order to facilitate future data collection.

Policy Implications: Can One Invest in Social Capital?

If one accepts the empirical evidence that social capital affects the well-being of people and the development of nations, the question of investing in social capital naturally follows. The history of development is one of investing in physical and human capital in order to enhance economic and social growth; a priori it would seem obvious that investment in social capital should be made as well. However, given the current stage of knowledge, the case is not clear. While studies have shown that no country has reached high levels of development without adequate development of its human resource base and without solid investment in human capital, the same empirical case has not yet been made for social capital. This partly reflects the difficulties of measuring social capital. The case is further complicated by the fact that, as economic development proceeds and markets develop, substitution takes place between different types of social capital. Typically, local and indigenous forms of social capital are replaced by more formal and larger-scale networks and institutions.

The SCI studies provide lessons about creating social capital at the community, supracommunity, and state level. The studies show that there is significant variation in the level of social capital across communities or villages within even a relatively narrow geographic area. The studies of villages in Rajasthan and Indonesia suggest that it is

[22] Krishna, A. and E. Shrader (2000), "Cross-cultural Measures of Social Capital: A Tool and Results from India and Panama", Social Capital Initiative Working Paper No. 21.

primarily the internal dynamics of the community that explain these differences. In many instances, the role of a specific village leader or other influential individual is acknowledged. These are factors that are unlikely to be stimulated through outside interventions. The study of women's groups and schools in Kenya shows that providing funds to local groups yields ambiguous results. While external funding did increase the strength of women's groups, it did not necessarily enhance the formation of social capital. The study also concluded that the benefits to schools and the impact on social capital depended upon whether the support was given in cash or in-kind. Studies such as these provide a hint at the way one could go about helping local institutions. Replicating this kind of study across the world in order to build a caseload from which recommendations can be generalized represents an enormous challenge.

A promising venue for the creation of social capital resides in supracommunal institutions. Local-level organizations (those operating strictly within a community) are very beneficial to the welfare of the households in the community, but their effectiveness is necessarily limited. Bebbington and Carroll's study showed the value of second-level organizations, which act as an umbrella for organizations at the community level and allow them to combine forces in obtaining resources and engaging in a dialogue with the next level of government. More important, their study shows that outside intervention can stimulate this type of organization and in doing so bestow benefits on communities and their members. Further research is needed to determine the extent to which such organizations function effectively in different cultural settings.

Finally, at the level of the state, the studies on Rwanda and Cambodia and on the role of ethnicity in Africa indicate that the way certain national institutions are set up affects policy formulation and can positively or negatively affect the maintenance of internal peace. These arrangements form part of macro-level structural social capital and can to some degree be changed directly by the state or its constituencies. An example would be the way elections are run and whether or not the government reflects a country's multiethnic composition. However, in many cases, macro-level institutions are the result of traditions going back generations or even centuries, and the practical scope for change in the short-term may be limited.

On balance it seems fair to say that the SCI studies, as the social capital literature at large, have been more successful at documenting the beneficial impact of social capital than at deriving policy prescriptions and providing guidelines about how to invest in it. Certainly, the case for massive investment in social capital has not been made. Investing in social capital is more difficult than investing in human capital, where a number of time-tested approaches are available (building schools, training teachers, developing appropriate curricula, and so forth). Equivalent recommendations for investing in social capital have not yet emerged.

A clearer case can be made in favor of less proactive, but no less consequential, approaches to social capital. As the evidence of the SCI studies clearly indicates, analytical tools are already sufficiently developed to register the presence and forms of social capital in a community. Including this information in project design can lead to development activities that, at a minimum, do not negatively affect existing social structures and norms. When faced with alternative project designs, development practitioners are now in a position to use information on the existence and forms of social capital in the community to select the design that will maximize the leveraging role of social capital in influencing project outcomes. The introduction of a social capital assessment exercise at the early stage of project design can thus facilitate and lower the cost of the project—and dramatically increase its likelihood of success.

The policy message derived from the SCI studies is thus one of bounded optimism. The studies demonstrate that social capital often matters more than technical or economic features of project design, and that there is an explicit interaction between them. Certain types of infrastructure should not be proposed for villages that lack the social capital to maintain them. The successful management of common resources requires minimum levels of human and social capital. Efforts at stimulating social capital have worked in enough settings to warrant pursuing strategies for investing in social capital.

Implications for the World Bank

The *World Development Report 2000/2001* set forth a new strategy for reducing poverty centered around three actions: promoting opportunity, facilitating empowerment and enhancing security (World Bank 2000). Institutional reform and the promotion of social capital are key elements on the road to empowerment. As part of institutional reform, state and social institutions must be made more responsive and accountable to poor people. Inclusive decentralization can bring service agencies closer to poor communities and poor people, and community-based development can give households greater voice and participation in a wide range of sectoral activities. Successful community-based development depends critically on harnessing the social capital of the community.

Although the World Development Report discusses social capital mainly under the empowerment heading, the pathways by which social capital affects development outcomes make it clear that the promotion of social capital is also part of the opportunity and security agendas. Many aspects of social norms and practices perpetuate poverty. Discrimination associated with gender, ethnicity, race, religion, or social status and the presence of exclusionary institutions create barriers to upward mobility and effectively reduce people's opportunities and their ability to build assets. On the positive side, local social capital embodied in mutual help groups, rotating savings and credit associations, and the like, create income opportunities for people which they otherwise would not have. Likewise, where poor households are part of networks and associations, their ability to cope with income fluctuations and other damaging events (natural disasters, illness and injury, etc.) is enhanced and their overall insecurity is decreased.

Thus, the protection and strengthening of existing social capital and the promotion of new social capital should be very integral elements of poverty alleviation strategies. The SCI case studies have documented the importance of this in different geographic and sectoral settings, and provide an empirical foundation for recommending social capital related policies and activities.

Within the World Bank, the notion that social capital has an important role to play in development assistance has gained increasing acceptance. This fits within the approach of the Comprehensive Development Framework which integrates social, cultural, institutional and economic factors in the development paradigm. In the early stages of this, the Bank's Social Development Task Force identified five types of action which the Bank could undertake in the area of social capital (Grootaert 1997):

(i) use current and new tools to understand more thoroughly the nature of existing institutions in client countries and their roles in social and economic development. Doing so should help ensure that Bank programs avoid weakening existing positive social capital (as they have sometimes done in the past), and identify areas where social capital needs to be strengthened;

(ii) where possible, work with existing social capital, especially people's associations and organizations, for the design and delivery of projects. This has the potential to (a) improve beneficiary targeting, (b) reduce project costs, (c) enhance sustainability, and (d) strengthen civil society through strengthening these organizations;

(iii) facilitate enabling environments that foster the strengthening of social capital in a country. The World Bank is especially well placed for such a role. This might include fostering greater interaction between civil society and government, enhanced civil liberties, enhanced mechanisms for government transparency, and stronger contracts and economic institutions;

(iv) invest directly in social capital. This may be done through training and capacity building of local organizations or through direct financial support; and

(v) conduct further research on the distributive and growth implications of strengthening social capital, and on strategies for working with civil society organizations.

The SCI studies have shed light on several of these issues, although more so on understanding and measuring the role of social capital on development results than on identifying strategies of direct investment in social capital. A number of Bank projects have already had a positive impact on social capital, usually through the promotion of participatory approaches towards project design and implementation, and through community-based development. For example, the Bank is supporting micro-credit initiatives which rely on social solidarity and community norms of trust. Agricultural and environmental projects have contributed to strengthening non-formal and civil society institutions such as water users' associations, joint forest management groups and indigenous federations. The SCI results draw attention to the need for greater focus on the role of social capital in several situations where the Bank and other donors provide support. This includes situations where:

- local communities mobilize social capital for the development of new income generating activities;

- urban and rural communities set up local-level alternatives to the inadequate provision of goods and services by the government;

- households and communities rebuild or revitalize social capital after conflict or political transition;

- decentralization leads to new responsibilities for communities and local government, and the forging of new links with the public and private sector.

A prerequisite for successful support in these situations is the systematic inclusion of social capital issues in the economic and social analysis that underlies Bank interventions. Recently, social capital assessments were undertaken in selected countries, either separately or as part of living standard measurement surveys. This practice should become more widespread and the Social Capital Assessment Tool is a suitable vehicle to that effect. Whenever possible, the analysis of social capital (and other aspects of social analysis) should be undertaken as part of and integrated in the analysis of poverty in Poverty Assessments, Poverty Reduction Strategy Papers, or Country Assistance Strategy Papers.

Our knowledge and ability to measure social capital and its impacts has sufficiently advanced to make systematic analysis of social capital possible in the context of poverty analysis and macroeconomic analysis. Further work is needed, though, to gather more experiences with efforts to promote social capital or to invest in it directly. The SCI studies have documented both successes and failures in specific settings and these provide a number of useful lessons for the design of Bank projects in several sectors. However, a systematic effort is needed to document experiences with stimulating social capital as part of projects and program interventions so that broader recommendations can be made for operationalizing social capital.

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ANNEX: LIST OF AVAILABLE SCI WORKING PAPERS

No.	Title
1.	The Initiative on Defining, Monitoring and Measuring Social Capital: Overview and Program Description
2.	The Initiative on Defining, Monitoring and Measuring Social Capital: Text of Proposals Approved for Funding
3.	Social Capital: The Missing Link? (by Christiaan Grootaert)
4.	Social Capital and Poverty (by Paul Collier)
5.	Social Capital: Conceptual Frameworks and Empirical Evidence: An Annotated Bibliography (by Tine Rossing Feldman and Susan Assaf)
6.	Getting Things Done in an Anti-Modern Society: Social Capital Networks in Russia (by Richard Rose)
7.	Social Capital, Growth and Poverty: A Survey and Extensions (by Stephen Knack)
8.	Does Social Capital Facilitate the Poor's Access to Credit? A Review of the Microeconomic Literature (by Thierry van Bastelaer)
9.	Does Social Capital Matter in Water and Sanitation Delivery? A Review of Literature (by Satu Kähkönen)
10.	Social Capital and Rural Development: A Discussion of Issues (by Casper Sorensen)
11.	Is Social Capital an Effective Smoke Condenser?: An Essay on a Concept Linking the Social Sciences (by Martin Paldam and Gert Tinggaard Svendsen)
12.	Ethnicity, Capital Formation, and Conflict (by Robert Bates)
13.	Mapping and Measuring Social Capital: A Conceptual and Empirical Study of Collective Action for Conserving and Developing Watersheds in Rajasthan, India (by Anirudh Krishna and Norman Uphoff)
14.	What Determines the Effectiveness of Community-Based Water Projects? Evidence from Central Java, Indonesia on Demand Responsiveness, Service Rules, and Social Capital (by Jonathan Isham and Satu Kähkönen)
15.	What Does Social Capital Add to Individual Welfare? (by Richard Rose)
16.	Social Capital in Solid Waste Management: Evidence from Dhaka, Bangladesh (by Sheoli Pargal, Mainul Huq, and Daniel Gilligan)
17.	Social Capital and the Firm: Evidence from Agricultural Trade (by Marcel Fafchamps and Bart Minten)
18.	Exploring the Concept of Social Capital and its Relevance for Community-based Development: The Case of Coal Mining Areas in Orissa, India (by Enrique Pantoja)
19.	Induced Social Capital and Federations of the Rural Poor (by Anthony Bebbington and Thomas Carroll)
20.	Does Development Assistance Help Build Social Capital? (by Mary Kay Gugerty and Michael Kremer)
21.	Cross-cultural Measures of Social Capital: A Tool and Results from India and Panama (by Anirudh Krishna and Elizabeth Shrader)
22.	Understanding Social Capital. Agricultural Extension in Mali: Trust and Social Cohesion (by Catherine Reid and Lawrence Salmen).
23.	The Nexus between Violent Conflict, Social Capital and Social Cohesion: Case Studies from Cambodia and Rwanda (by Nat J. Colletta and Michelle L. Cullen)
24.	Understanding and Measuring Social Capital: A Synthesis of Findings and Recommendations from the Social Capital Initiative (by Christiaan Grootaert and Thierry van Bastelaer)