SOCIAL CAPITAL AND THE TRADEOFF BETWEEN ENVIRONMENT AND DEVELOPMENT

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Environmental Collaboration

Collaborative or cooperative approaches to environmental and natural resource management provide potential solutions to the dilemma of the environment development tradeoff (Lubell et al., 2002). These approaches rely on positive incentives and partnership arrangements. Transaction costs, lack of information and community involvement, and absence of trust among participants have been identified as barriers to effective intergovernmental and public/private collaboration in environmental management (Wondolleck and Yaffee, 2000; Feiock and Stream, 2001). Community social capital has been hailed as the critical resource to overcome barriers to collaboration, but the process by which social capital works has not been clearly delineated. In fact, the literature is not even clear as to just what social capital is. This essay takes the initial steps in building a theory of environmental collaboration by identifying the underlying dimensions of social capital relevant to environmental and economic development decisions. We then describe the resulting "types" of social capital and link them to environmental collaboration.

Over the past decade the term social capital has received considerable attention from scholars in a variety of fields. Social capital is valuable because it provides resources to solve problems of coordination and cooperation, reduces transaction costs, and facilitates the flow of information between and among individuals in community or organization (Ostrom, 1998; Ostrom and Ahn, 2002; Feiock and Tao, 2002; Lubell et al., 2002; Lubell and Scholz, 2001;Lin, 2001). Similarly, Putnam (1993) argues that social capital makes collective works easier and, ultimately, facilitates economic and community development

The concept of social capital has become increasingly popular in a wide range of social science disciplines, but there is a lack of consensus on the meaning of term. In social science research "social capital" is used in vastly different ways. Critics have characterized research examining the impacts of social capital as '"casual empiricism", because it lacks of an obvious link between theory and measurement (Durlauf, 1999).

In order to better understand how social capital can help state and local governments reconcile environmental and development goals, we systematically define and classify social capital based on its scope and form. This allows us to identify different "types" of social capital that can shape collaboration and partnership among actors concerned with environment and economic development.

The Scope of Social Capital

The scope of social capital ranges from the micro to the macro level (Grootaert and van Bastelaer, 2001). Analysis of social capital at the micro level is usually associated with face-to face interaction between and among individuals(Turner, 1999), and those features of horizontal relationship, such as networks of individuals or households, and the associated norms and trust, that generate externalities for the community as a whole(Putnam, 1993). James Coleman (1990) includes vertical as well as horizontal associations and behavior within and among organizations by expanding the unit of observation and introducing a vertical component to social capital (Grootaert and van Bastelaer, 2001).

A macro-view of social capital includes the social and political environment that shapes social structure and enables norms to develop (Grootaert and van Bastelaer, 2001). This view includes the most formalized institutional relationships and structures, such as the rule of law, the political regime, the court system, and civil and political liberties. This focus on institutions draws on the work of Mancur Olson (1982) and Douglas North (1990), who have argued that such institutions have a significant effect on the pattern and rate of economic development. The phenomena related with the micro and macro level conceptualizations are complementary and their coexistence maximizes the waves 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 (Grootaert and van Bastelaer, 2001).

The Forms of Social Capital

The Uphoff (2000) suggested two dimension of social capital—structural and cognitive. Structural forms of social capital concern the roles, rules, procedures, and networks that facilitate information sharing, and collective action and decision-making 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).

Landry, Amara, and Lamari also classify two form of social capital: Structural and Cognitive. They measure three type of structural social capital: Network capital, Relationship capital, and Participation capital. Cognitive social capital was measured by trust capital. Krishna (2000) makes a similar distinction between institutional capital and relational capital.

The structural (Institutional) dimension of social capital includes rule of law, formal institutions and organization structures, but it also encompasses the overall pattern of relationships in an organization and its included network. This conceptualization is similar to Granovetter's (1973) notion of weak ties.

The relational dimension of social capital concerns the nature of connections between individuals. It is characterized by levels of trust, shared norms and perceived obligation, and sense of mutual identification. This conceptualization of relational social capital is similar to Granovetter's (1973) notion of strong ties. Likewise, Feiock and Tao (2002) distinguish endogenous and exogenous social capital, and examine their effects on the regional economic development partnership as one form of collective action.

A Typology of Social Capital

Whether at the micro 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. Cooperation and coordination among 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(Grootaert and van Bastelaer, 2001).

We craft a typology of types of social capital framework based on these two key dimensions: its scope and its form. The framework treats social capital as a genuine asset that requires investment to accumulate and that generates a stream of benefits.

Figure 1
Dimension of Social Capital

Macro (Vertical)

Structura l	**Institution of the state, Rule of law**	**Governance, Shared Belief of civil & politic al liberty**	**Cognitive (Endogeno**

(Exogenous)	Local Institutions, Networks, Civic Engagement, Participation	Trust, Local Norms and Values	us)

Micro (Horizontal)

Source: reorganized Grootaert and van Bastelaer(2001)

Ideally empirical investigation of social capital would examine and measure all four quadrants of Figure 1. Empirical work had generally focused on one or at most two of these quadrants. The most extensive work has been on micro level institutions or norms. Recent work (Park 2003) has used confirmatory factor analysis to empirically isolate these dimensions.

Social Capital, Environmental Collaboration, and Economic Performance

Differentiating the types of social capital may help us understand how some state and local governments are able to overcome tradeoffs between environmental and economic gains.

Lubell and Scholz (2001) suggest that reciprocity in relationships among governmental and non-governmental actors and lengthy time horizons are necessary to achieve sustainable development and to overcome collective action problems in environmental management. By extending these arguments, we contend that overcoming tradeoffs between developmental and environmental concerns requires: 1) participation in democratic political institutions; 2) social mechanisms to resolve conflicts from unharmonious development; and 3) information sharing for the diffusion of innovations. Each of these is facilitated by social capital in the community.

Specific types of social capital influence collective action and economic performance. 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 influences development-includes several associated elements (Grootaert and van Bastelaer 2001). First, Cognitive social capital at the micro level (i.e., endogenous social capital) such as trust, shared norms, and informal sanction reduce transaction costs. Reputations built through trust and reciprocity reduce information, monitoring, and enforcement costs and thus facilitate cooperation and collective action.

Second, Structural social capital such as associations, networks, and institutions provide an informal and formal framework to organize information sharing, coordination of activities, and collective decision- making. Participation by individuals in social networks increases the availability of information and lowers its cost. This information, especially if it relates to such things as new “green” technologies can play a critical role in increasing the returns from economic production while mitigating adverse environmental consequences.

Participation in local networks and attitudes of mutual trust make it easier for a group to reach collective decisions and implement collective action. Since property rights are often imperfectly developed and applied, collective decisions on how to manage common resources are critical to maximizing their use and yield.

Finally, networks and attitudes reduce opportunistic behavior by community members. In settings where a certain behavior is expected from individuals for the benefit of the group, social pressures and fear of exclusion can induce these individuals to provide the expected behavior by reducing transaction costs and encouraging innovation.

Social capital contributes to sustainable economic development and growth by reducing conflict and the transaction costs of environmental management and by facilitating information sharing and the diffusion of innovation. Environmental governance systems based on partnership provide one mechanism to exploit existing social capital in its various forms and generate additional social capital resources.

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