Does social capital improve watershed environmental governance?

Fernando Monteiro

Retour au menu

A. Richard, P. Caron, J.Y Jamin, T. Ruf (éditeurs scientifiques), 2006. Coordinations hydrauliques et justices sociales. Actes du séminaire, novembre 2004, Montpellier, France. Cirad, Montpellier France, Colloques

Does social capital improve watershed environmental governance?

Fernando Monteiro, MsC.

PROCAM – Programa de Pós graduação em Ciência Ambiental. USP - Universidade de São Paulo
Pça Japubá, 35 apt. 14 b - Sao Paulo, Brésil

Abstract — Does social capital improve watershed environmental governance? In Brazil, water management has been both sectored and centralized. In the 1990s, a series of state level reforms granted substantial participation to civil society and water users' organizations by incorporating Integrated Water Resourse Management principles and Watershed Committees as its guideline. However, its full implementation should produce quite different outcomes, understood as improved or poorer watershed environmental governance. That means that the key reason why some of these new institutions fail while others succeed is a question that remains to be fully understood. This paper examines the institutional performance of two watershed committees in Sao Paulo's Metropolitan Area, in Brazil. Specifically, we analyze why do two watershed committees, facing very similar social, economical and environmental scenarios present distinct institutional performances. Two hypothesis were considered: a) the amount of social capital within the watershed committee has a direct impact on the overall institutional performance of these committees, and therefore on the watershed environmental governance; and b) the way civil society organizations, municipalities and State representatives articulate themselves within the committee – from a social network point of view – also impacts the watershed's environmental governance. Results showed that both social capital and the social organization have an impact on the governance of these institutions over the watershed. Likewise, it is highly advisable that policy makers working on watershed management and related issues should take into account the interactions and roles played by local policy networks, as well as the relationships among relevant actors.

Résumé — Le capital social améliore-t-il la gouvernance des bassins versants ? Au Brésil, la gestion de l'eau a été à la fois sectorialisée et centralisée. Dans les années 90, l'Etat a pris une série de mesures visant à améliorer la participation de la société civile et des associations d'usagers en y incluant, les principes de gestion intégrée des ressources en eau et de comités de gestion des bassins versant. Cependant, la mise en œuvre de ces mesures a engendré des résultats différents, aussi bien dans le sens de l'amélioration que de la dégradation dans la gestion des bassins versant. La raison principale de réussite ou d'échec de certaines de ces nouvelles institutions reste à élucider. Cet article examine les résultats sur un plan institutionnel de deux comités de bassins versant dans la zone métropolitaine de Sao Paulo, au Brésil. Plus spécifiquement, il analyse pourquoi deux comités, face à une situation sociale, économique et environnementale semblable obtiennent des résultats différents. Deux hypothèses sont considérées : a) le capital social interne à un comité exerce une influence directe sur les résultats globaux de ces comités, et donc sur la gouvernance du bassin versant ; et b) la manière dont les organisations de la société civile, les municipalités et les représentants de l'Etat s'articulent au sein du comité – sous l'angle des relations sociales - a également une incidence sur la gouvernance du bassin versant. Les résultats montrent qu'aussi bien le capital social que l'organisation sociale ont un impact sur la gouvernance des comités de gestion de bassin versant. Il apparaît donc important que les intervenants dans les politiques de gestion des bassins versant tiennent compte des interactions et des rôles joués par les réseaux politiques locaux, ainsi que des rapports sociaux établis entre les acteurs impliqués.

Environmental policy and social participation in Brazil

By the end of the eighties, the debate around public policies and natural resources management in Latin America was structured around two fairly new concepts for the region: decentralization and democratization. With regards to water resources, the concept behind IWRM – Integrated Water Resources Management was the cornerstone for much of the reforms that took place in the water sector. Countries like Brazil, Chile and Mexico, to mention a few, have deeply incorporated these principles in their water reforms (Dourojeanni, 2002). Nonetheless, the outcomes of the reforms are still a fuzzy subject.

Within the political framework settled by the transition towards a stronger democratic State, new environmental forums were created in Brazil during the early nineties. Social participation gained substantial attention from both government and society, as the country witnessed an emergence of different forms of social organizations (Jacobi, 2000). Changes in the traditional political and institutional settings, along with the broadening of social participation in public affairs have demanded the need for new democratic institutions, responsible for crafting regulations over natural resources management.

The phenomena of public policies made under social participation are strongly related to changes in Brazil's political momentum. In Latin America as a whole and in Brazil in particular, the nineties set the grounds for a fierce debate about State's role, especially with regards to its closure towards civil society participation in policy making (Acselrad, 1992). If one is concerned about democratic and decentralized institutions, then efforts must me made in order to strengthen broader and participative forums. In Brazil, the broadening of these new arenas for public participation on policy making enhanced citizenship both in a quantitative and in a qualitative way (Abers, 2001). Watershed committees are a good example of how institutional reforms may enhance social participation and bring State and society together by closing the gap between the public and private divide. The challenge beset now is to make these watershed committees effective in their main attribution: govern the watershed in a sustainable way (Jacobi, 2004).

The shift from a technical point of view to an institutional approach in water resources analysis is consistent with a vast body of development literature (Polanyi, 1944; Hirschman, 1977, Ravallion, 1997; Sen, 1997, 1999), which strongly relies on socio-political aspects rather than solely on technical ones. In the domain of water resources management in Brazil, this is particularly true since the scarcity of water raised new conflicts. The resolution of these conflicts accrues from new institutions, responsible for crafting and controlling norms for water's access and use (Monteiro, 2004).

When analyzing the trends in water policy in Brazil, two aspects draws one's attention: first, the social capital within these committees, that is to say the role played by trust, solidarity, reciprocity and associational life of committee members (Putnam, 1993); and second the interactions and coordination between public and private stakeholders, from a State – society synergy point of view (Evans, 1997).

With regards to social capital, the emergence of social phenomena such as corruption, civil violence, uprisings, and social inequalities have led scientists to believe that besides structural and intellectual needs – that is to say physical and human capital – both networks and patterns of group behavior also play an important role if development is to befall (Woolcock, 1999; Coleman, 1990; Ostrom, 1990; Putnam, 1993). Groups where most of the people are trustworthy and their interactions are based on values such as solidarity, reciprocity and shared beliefs are more likely to cooperate, especially because these characteristics promote collective action (Portes, 1998; Krishna, 2000; Uphoff, 2000). The vast body of literature on the effects of social capital over institutional performance (Putnam, 1993; Serageldin, 1998; Isham, 2000) allows us to seek explanations for better institutions based on this theoretical framework.

The State – society paradigm indicates that polycentric institutions perform better when private and public stakeholders have the ability to coordinate their actions (Ostrom 1990; Evans, 1997). What allows groups with high heterogeneity to achieve high scores of efficiency in its programs and policies is the amalgam between private and public stakeholders, expressed by a dense social network among public servants and civil society representatives (Tendler, 1997; Lin, 1989), in what has been referred to as embedded autonomy. The idea behind the concept of embedded autonomy refers to those day-to-day interactions between the public and private domains, and to all liability built upon this relationship (Evans, 1997).

Therefore, the coordination between strong public institutions and organized communities can be an effective development mechanism. Stronger ties, cohesion and reciprocity between these stakeholders will ultimately make collective action more likely to happen, thus promoting higher institutional performance.

Water resources in Brazilian metropolitan areas

Water resources management in Brazil can be better understood from a demographic and socio-economic perspective. Urban growth in Brazil has been rising constantly, resulting in highly populated cities. Between 1950 and 2000, urban population went from 36% to 81% of total country's population (IBGE, 2000). The nine metropolitan areas created in the 1970s housed 41.9 million inhabitants in 1991, and 48.9 million in 2000, keeping its relative participation (respectively 28.7% and 28.8%) in total country's population (IBGE, 2000).

Jacobi (2004) points out that the still fast growth pace of these agglomerations, their geographic expansion, and the lack of proper land planning lead to a series of problems: 1) pollution of water streams; 2) increasing number of floods, usually associated to high rates of soil impermeability; 3) erosion problems, especially in slopes occupied by low income urban dwellers; 4) occupation of creeks, what is especially unhealthy; 5) growing pressure over the water resources available for public supply; 6) difficulties in protecting springs threatened by extensive urban sprawl; 7) limited water availability and inter-regional conflicts over water use 8) urban sprawl over manatial areas; 9) low raw water quality at catchments, due to domestic, industrial and agricultural pollution; and 10) domestic and industrial pollution of rivers that cross metropolitan areas, what negatively impacts the water supply within the catchments basin. The metropolitan areas, though they concentrate a considerable part of the economic activity, have also always stood out for growing levels of poverty, which results in over demanding public services. In 2000, 60% of the Brazilian population did not have access to the public sewage systems, and 23.9% to water supply systems. The Southeast, South and Center-Western parts of the country are in a better off situation – 84.6%, 80.3% and 77.9% of the population are served by water supply systems, and 63.6%, 26.1% and 33.1% by public sewage systems. Lower indexes are to be found in the Northeast and North, where only 63.9% e 51.9% are served by water supply systems, and 17.7% and 2.8% served by the public sewage systems (IBGE, 2000).

To cope with this problem a reform of the water resource management was conducted. The driving concepts behind the reform were: decentralization, by the adoption of the water basin (watershed) as the territorial unit for development plans; integration between stakeholders (State, Municipalities and civil society); and coordination between the technical, financial and political stakeholders (Rocha, 1998). As for water users, the main change was the WBC – Watershed Basin Committee (Comitês de Bacia Hidrográfica). These committees are the common ground for debate on all issues related to water management in a specific water basin. Their structure foresees the equal participation of all three stakeholders relevant to the proper functioning of water management: State, municipalities and civil society. Together, these stakeholders should coordinate the activities related to the use and protection of water resources within the water basin (Martins, 2001). These committees have become responsible for water basins planning, development and preservation. These reforms brought clear and specific demands regarding the actions and attributions of these committees, among which it is important to highlight the obligation of "approving the master plan for the use, conservation and protection of the water resources within the watershed, and promoting the understanding, cooperation and eventual conciliation between all stakeholders involved with water resources" (E.S.P., 1998a).

However, the effective implementation of these reforms has had different outcomes, what suggests that the fate of these newly crafted institutions depends upon a series of factors. One of the most important is the committees' ability to constitute itself in a way that cooperation between the various interests represented there are encouraged, so that challenges related to the use and protection of water resources can be overcome. Thus, we believe that the ability of these institutions to coordinate their actions in cooperative way is increased as the synergy between State and society and the stock of social capital among these stakeholders grows (Monteiro, 2004).

Institutional performance of watershed committees

Watershed committees are proper arenas for a comparative study of institutional performance and their relation to cooperative behavior. The actions coordinated by these institutions – preservation of natural resources and land use planning – are activities that when carried out separately reach, in most of the cases, unsatisfactory results (Monteiro, 2003).

Institution's performance should be measured by its ability to respond to the demands imposed upon them, and also do it effectively. Evaluation of institutional performance should be comprehensive and not limited to a few aspects of the organization and the analysis of their activities should be as broad as possible. The evaluations should be internally coherent, reliable in the sense of translating the performance of an institution along; and, finally, should be based upon criteria that are not foreign to the leaders or members of the institutions being analyzed (Putnam, 1993).

Our analysis of the institutional performance of watershed committees is structured on four dimensions: a) decision making process (planning and evaluation); b) resource management and mobilization; c) internal and external communication and coordination; and d) conflict resolution mechanisms. The presence or absence of these features will determine the ability of social groups in creating, defining and operating under rules agreed upon collectively. A group that is capable of swiftly executing the activities mentioned above should also present a better performance in its actions. On the other hand, a group where collective action is complicated will find it hard to reach its goals and consequently will have lower institutional performance (Uphoff, 2000).

State - Society synergy and social networks analysis

Social networks are built upon the existence of bonds that individuals or groups of individuals built intentionally from a common shared reference. The way in which each individual positions him/herself in the network will determine in the last instance his/her conditions and possibilities of interference and power, and the relationship standards generated by these networks can be used to explain political and social phenomena (Marques, 1999; 2003).

In addition to acknowledging these networks, social networks analysis is an analytical instrument that allows us to not only experimentally rebuild social networks, but also verify their influence on political and social processes (Marques, 2003). The central focus of social networks analysis is the relationships between actors, and not of their categories or attributes. Attribute data have to do with the characteristics or qualities, while relationship data have to do with contacts, bonds, connections, or groupings of people that relate to one another, and therefore cannot be reduced to the individual properties of the actors (Scott, 1992; Emirbayer, 1997). Though important for the description of numerous phenomena, the characteristics and attributes do not have to do with social actions, but with their actors instead. In this sense, according to Marques, "they explain a part of the phenomena, but leave aside important processes that can be studied only by considering bonds and relationships directly" (Marques, 1999).

Based on this methodology, we can analyze the interaction between State and society without resorting to prior structural standards, allowing both fields to permeate each other, which allows us to interpret social reality more precisely. By using the concept of networks we can achieve a great detailing of individual relationships without losing sight of the structure of the whole field and the more general standards, introducing new and unusual dimensions to the understanding of the State (Marques, 1999).

Thus, the analysis of social networks constitutes an appropriate method for verifying the patterns of social relationships and their configuration in watershed committees, allowing, through their multiple techniques, for the representation and analysis of the interactions between the government and the civil society. This analytical characteristic turns Social Network Analysis into an appropriate tool for studying the synergy between State and Society in the institutions here considered.

Methodology

For the evaluation of the institutional performance, a structured analysis from the indicators mentioned above was conducted. Literature (Uphoff, 2000) indicates that the analysis of these indicators in an aggregated way allows for a clear and objective evaluation social groups performance. Data was collected through a questionnaire answered by members of the two watershed committees. 22 people were interviewed in the Billings-Tamanduateí committee, (91.66%) and 27 in the Cotia-Guarapiranga committee, (81.81%). For each question, a set of alternatives was defined, varying gradually from low to the high institutional performance situations. The institutional performance index (IP) is calculated by

adding up the score in each answer of its four categories described above. The index reflects the general member's perception about the activities carried out collectively by the watershed committee. We were careful as to only select indicators related to the way each groups conducts its internal activities. We should not consider as the object of institutional performance analysis, observations that are not directly related to the committee's activities. Thus, it does not make sense to include, for example, indicators such as water quality, since it is subject to a series of actions and interferences that most of the times do not depend solely upon the committee's activities. The index allows us to compare the performance of each committee from a common point of view, which makes the comparison more precise. As we have mentioned, the analysis of the collective perception of these institution's performance represents a coherent way of making this comparison since it demonstrates the opinion of stakeholders directly involved with the institution.

To gauge committee's social capital all committee's members were interviwed. The same questionnaire was used in both cases. 22 people were interviewed in the Billing committee and 27 in the Guarapiranga committee. The main objective was to map the perception of members as to the following indicators: a) the characteristics of the association or organization to which the person interviewed belongs; b) trust in other members and in the committee as an institution; c) reciprocity; and d) cooperation between the person being interviewed and the other members. A number of alternatives were defined for each question, varying gradually from a situation that represented low social capital to the optimum situation for that theme. Each alternative received a specific weight, calculated by dividing the value of each question by the number of alternatives presented. By adding the value of all the answers in a questionnaire, we obtained the value of the social capital for that questionnaire. The sum of the totals of each questionnaire allow for obtaining the absolute value of the SCI – Social Capital Index for each committee studied.

The state-society synergy was analysed by the methods of Social Network. All watershed committee's members were interviewed, in both cases. To rebuild the social networks, we applied questionnaires to the elected members of each committee. We interviewed 22 people in Billings Committee and 27 in the Guarapiranga Committee. In each interview, we asked the respondents to name, without resorting to any listing, five people with whom they had more significant bonds with regards the water resources management of the particular watershed, being the interviewee able to name people that are not water basin committee members. Those names mentioned were characterized according to the institution or organization to which they belong, since our objective was to map the relationships between the three groups. Data was then processed using UCINET software to generate sociograms and calculate algorithms.

The choice for these specific two watershed's rely on the fact that they are part of a larger water basin, therefore exposed to very similar social, economic and environmental scenarios.

Results

After data processing, we reached the following result: IP Billings = 24.22 and IP Guarapiranga = 20.46. These values have proven to be statistically significant when submitted to the "t" test, at the level of 1%.

Asymmetries found in the institutional performance of the committees studied can be explained from the following hypothesis: the social capital within a watershed committee should positively influence the performance of that organization (Putnam, 1993).

The elaboration of the SCI allows for determining how dimensions of human behavior such as associational life, trust, reciprocity and cooperation are present among committee's members. After data processing, we reached the following result for social capital: SCI Billings = 21.75 and SCI Guarapiranga = 19.69. Once again, these values have proven to be statistically significant when submitted to the "t" test, at the level of 1%.

Social Capital and Institutional Performance

Once demonstrated the asymmetries in institutional performance and in social capital stocks, we are able to test our hypothesis and verify how the two variables relate to each other. Figures 1 to 3 show the relation between social capital and institutional performance in the watershed committees studied. The figures indicate that there is a positive relation between social capital and institutional performance in both cases studied.

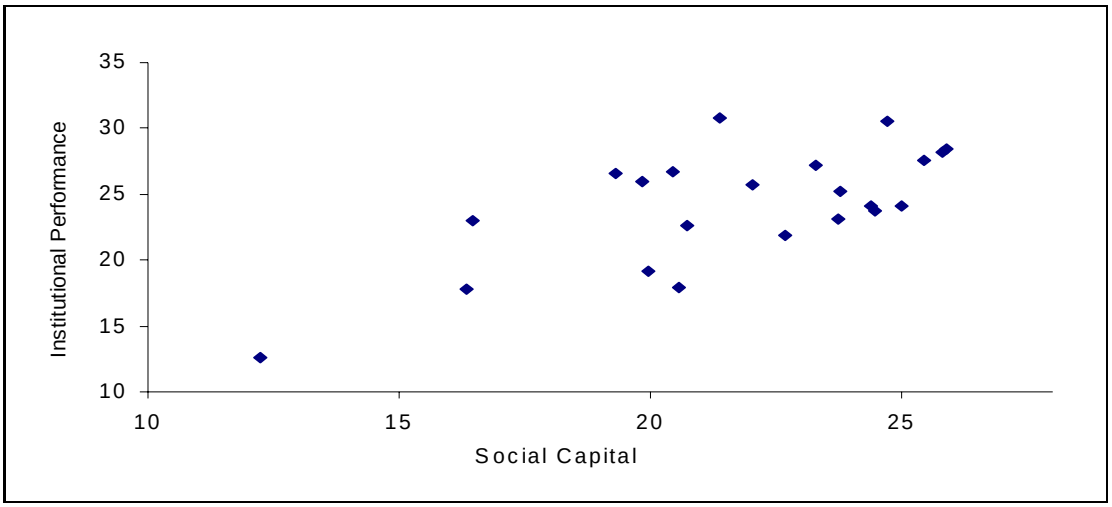

Figure 1. Social Capital and Institutional Performance in Billings.

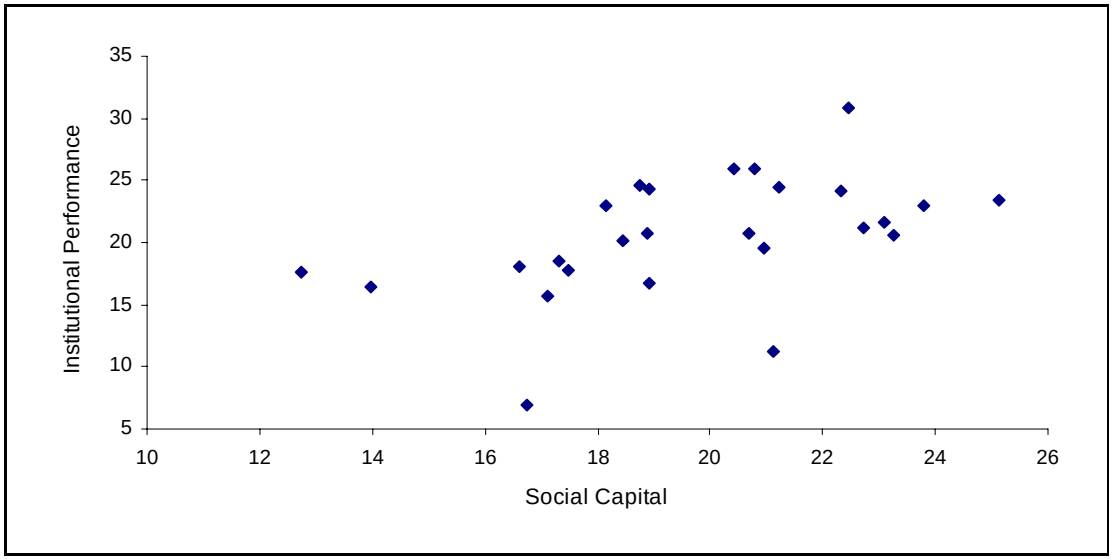

Figure 2. Social Capital and Institutional Performance in Guarapiranga.

The correlation between the two variables in Billings committee is 0.68. For Guarapiranga this value drops to 0.48. Considering these figures and the graphs below, it is accurate to say that there is a positive relation between the variables.

After combining the two data series, the relation can still be noted (Figure 3), but with a correlation coefficient of 0.62. Thus, we can say that there is in fact a positive relation between our independent variable – the social capital, and the dependent variable – the institutional performance.

The two watershed committee's networks

The water resources management community represented by the watershed committees incorporates basically three groups of social actors: State, municipalities and civil society. This equal and tripartite division is foreseen in the legislation, however the social network that is formed does not necessarily maintains the same proportionality foreseen in the legislation. That happens because the networks are built upon the different points of view that each individual, or group of individuals, possesses or is willing to share with the other(s). Therefore, the network is dynamic and is constantly changing. Thus, the networks here analyzed have to do with the subject, points of view and projects that deal specifically with the water resources management in the respondents' specific watershed.

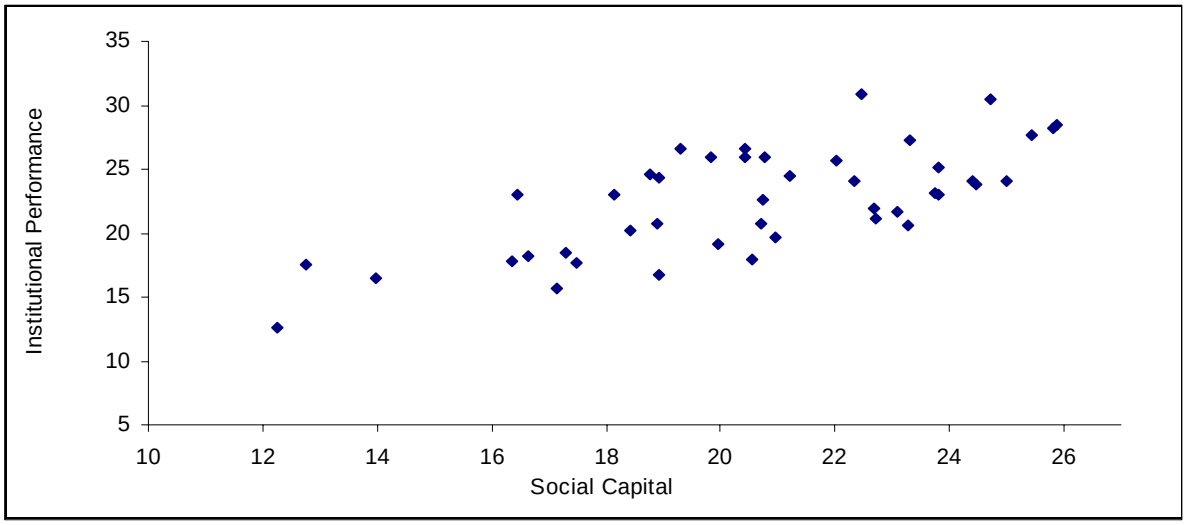

Figure 3. Social Capital and Institutional Performance in Billings and Guarapiranga.

Figures 4 and 5 shows the two watershed sociograms[1]

It also indicates that in the Billings watershed committee there is greater closeness between the municipalities, which reinforces the idea of an institutional organization of municipalities. This is consistent with field observations, since in the region we find the Consórcio do Grande ABC (a consortium of cities called ABC), an institution highly capable of promoting such coordination and that is deeply involved in the creation of a political-administrative scenario that allows for the creation of a common regional development plan in the area. In Guarapiranga, though, the municipal representatives are more distant from each other, what indicate less coordination. Again, this observation is reinforced by the fact that in the Guarapiranga basin there are few cases of inter-municipal coordination. With the exception of one water and sanitation program financed by the World Bank

There are no joint investment programs in the region, concerning socio-environmental issues, which promotes greater closeness between these municipalities.

Another important aspect is the number of social actors per segment in each network, and the number of individuals who are external to the committee, but who were mentioned by the people interviewed, and therefore are important in the water resources management. In the Billings watershed network there are 43 individuals (16 from the State, 17 from the civil society, and 10 from the municipalities) and 24 individuals that are not formal committee members. In Guarapiranga, the social network is composed of 45 individuals (15 from the State, 14 from the civil society, and 16 from the municipalities), the number of individuals external to the committee being only 15. This observation gives us an idea of the committee's permeability to external actors, which should be understood as a positive factor (Jacobi, 1989). Other important factor in social networks analysis is centrality. The centrality of a certain actor is characterized by greater or smaller power exerted by that actor as a result of the position he/she occupies in the network. The greater the number of relations among other actors that a certain individual is able to intermediate; the greater the centrality and consequently his power and influence over the network (Hanneman, 2001). In general, social networks with higher centrality tend to concentrate information and power over fewer individuals. In the Billings social network, the index for centrality is 23.64%; in Guarapiranga, though, the index is 31.31%

In Billings, from the ten individuals that occupy central positions, 6 are from municipalities, 2 are from State agencies, and 2 from civil society organizations. Again we notice the coherence of these values with field observations, verified by the central role played by the municipalities of the ABC region. In Guarapiranga, from the ten people that occupy more central positions in the network, 4 are representatives from municipalities, 4 are from the State, and only 2 are from civil society organizations. This analysis proves one of the main characteristics of the system: despite the parity of the three segments foreseen in the legislation, the power is not equally divided, and in this scenario, the civil society segment is in a clear disadvantage position.

[1] Sociograms are graphic representations of relation among people, where each dot represents an individual, and lines represent the links between them.

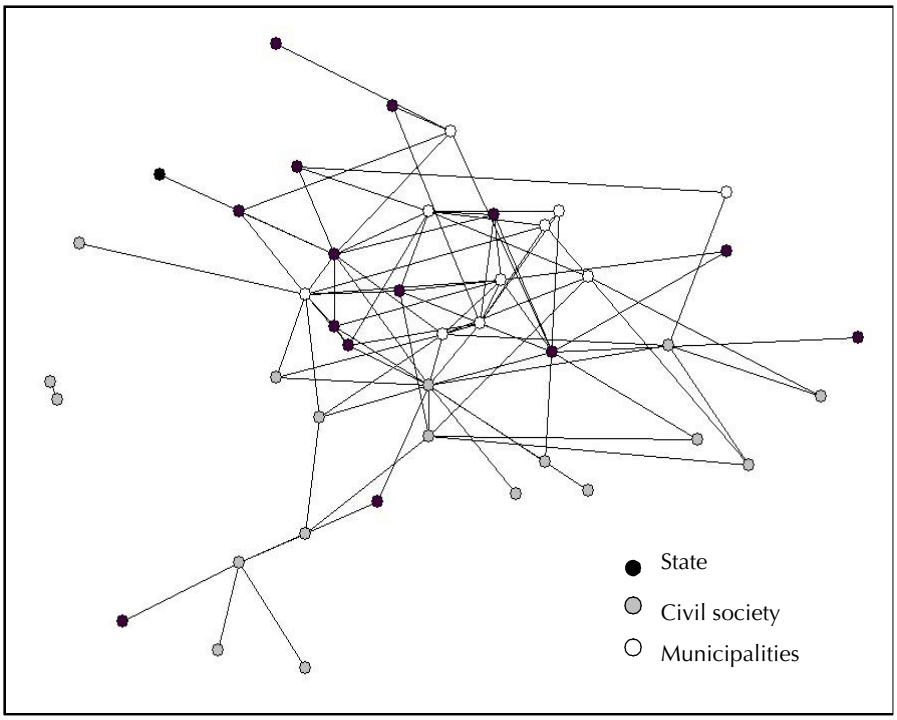

Figure 4. Billings's watershed social network.

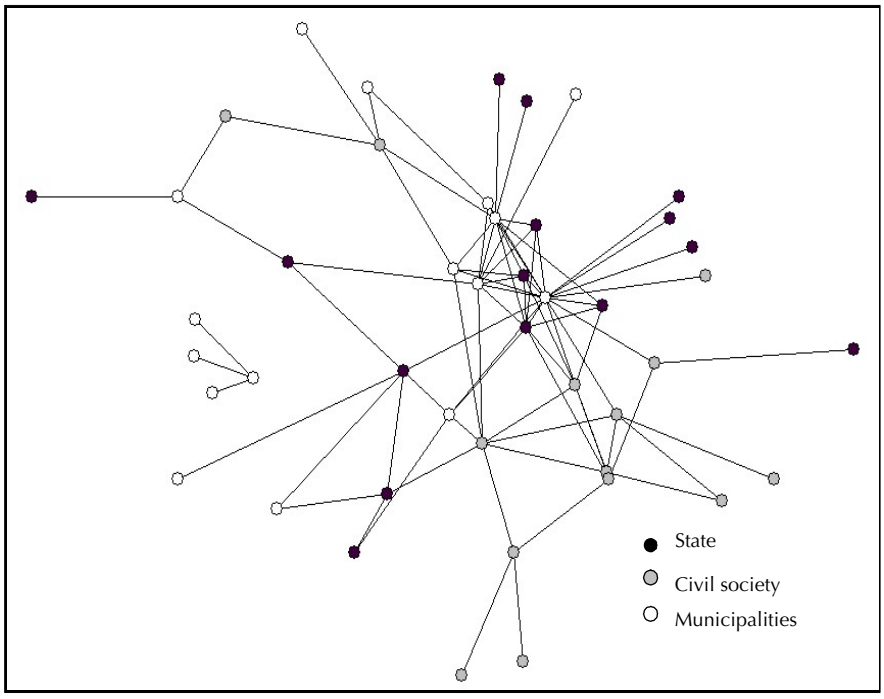

Figure 5. Guarapiranga´s watershed social network[2].

Still with regards to the participation of the civil society in these committees, we can observe that the total number of individuals that represent this segment is larger in the Billings committee (17 individuals) that in the Guarapiranga subcommittee (14 individuals). The difference is even greater if we consider that the number of seats for the civil society in Billings is 8 and in Guarapiranga it is 11. That is, the civil society in Billings is really more organized and can bring in other actors from their segment into the committee, what shows us that there is in fact greater participation and involvement of the civil society at Billings.

2 The Guarapiranga Water and Sanitation Program, financed partially by the World Bank invested nearly US$ 300 M in the watershed.

However, and as suggested by literature (Jacobi, 1989; 2004), the participation in itself does not ensure a better functioning of watershed committees. It is important that the necessary conditions are created for transforming these arenas into effective instances of democratization in the decision making process. In the Billings, as in any other watershed committee, the efforts promoted by the civil society aiming at strengthening its presence cannot be separated from a strategic vision of the process, where the valuing of attitudes such as organization, alliances, partnerships, and synergy itself, among the three segments should drive the way this and other segments act.

Conclusions

The debate raised around social capital as a concept that explains the existence of better institutions should be treated rigorously when transported to situations such as the one studied here. Our conceptual and operational formulations about the effects of social capital in the institutional performance of the watershed committees have proved that. The idea that particular aspects within social groups do influence institutional development can only gain strength if we are able to take it from a rhetorical to a level where these phenomena can be effectively observed and quantified.

The analysis of the institutional performance of the watershed committees from the social capital perspective has proved that there is a positive relation between these variables. In fact, in the cases studied, the existence of trust, solidarity and disposition to cooperate among the committee members seem to positively influence the ability of the group to coordinate its actions. And although the research has mapped and verified the existence of asymmetries in a specific timeframe, it is reasonable to assume that these processes are highly path dependent and tend to continue unaltered.

The study of the water resource management system from a social networks perspective allows us to conclude that in the cases studied, the interaction is greater between State and municipalities, and that the civil society representatives are clearly set apart from the decision making process. Results proved to be consistent with field observations. In fact, the civil society, in both cases studied, finds serious limitations in occupying a position to influence this process. From that comes the verification that the system has not been able to remain faithful to parity between the three segments. Although in the Billings committee the civil society is able to exert greater influence than their colleagues from Guarapiranga, the fact is that, in general, this system has not behaved in a flexible manner regarding the acknowledgement of civil society actions and propositions. Thus, the dynamics of the Billings and Guarapiranga watershed committees is highly dictated by initiatives from the State and municipalities.

Thus, it is highly recommended to public policies and water resource management specialists to take into consideration both the social interactions, and the roles played by the State, municipalities, and the civil society and the social networks built by these actors.

References

ABERS R., 2000. “Inventando a democracia: distribuição de recursos públicos através da participação popular em Porto Alegre, RGS”. http://www.portoweb.com.br/ong/cidade/texto2.htm. 28 de maio de 2000.

ACSELRAD H., 1992. “Meio Ambiente e democracia”. IBASE - Instituto Brasileiro de Análises Sociais e Econômicas, Rio de Janeiro, Brasil.

ARAÚJO M. C., 2003. Capital Social. Rio de Janeiro : Jorge Zahar Ed.

BOURDIEU P., 1985. The Forms of Capital. In Handbook of Theory and Research for the Sociology of Education, ed. J. Richardson. NY., Greenwood..

COLEMAM J. S., 1990. Foundations of Social Theory. London: Harvard University Press.

DOUROJEANNI A., JOURAVLEV A., 2002. Gestión del agua a nivel de cuencas: teoría y práctica. CEPAL – Economic Commission for Latin America and the Caribbean.

EMIRBAYER M., 1997. Manifesto for a relational sociology. American Journal of Sociology, 103, 2.

E.S.P. ESTADO DE SÃO PAULO, 1998. Legislação sobre recursos hídricos. Secretaria de Recursos Hídricos, Saneamento e Obras. Conselho Estadual de Recursos Hídricos. São Paulo.

EVAN P., (org.) 1997. State-Society Synergy: Government Action and Social Capital in Development. Berkeley, UC Berkeley, International and Area Studies Publications.

HANNEMAN R., 2001. Introduction to Social Network Methods. Online textbook, Department of Sociology, University of California, Riverside.

HIRSHMAN A., 1977. The Passions and the Interests: Political Arguments for Capitalism before Its Triumph. Princeton: Princeton University Press.

ISHAM J., 2000. Can Investments in Social Capital Improve Local Development and Evironmental Outcomes? A Cost-Benefit Framework to Assess the Policy Options. Pesquisa na internet em www.worldbank.org/poverty/scapital em agosto de 2003.

IBGE – Brazilian Institute of Geography and Statistics, 2000. Censo 2000.

JACOBI P., 1989. Movimentos sociais e políticas públicas (Social Movements and public policies). São Paulo: Ed. Cortez.

JACOBI P., 2004. Gestão Participativa de Bacias Hidrográficas no Brasil e os desafios do fortalecimento de espaços públicos colegiados (Participative Management of the Water Basins in Brazil and the challenges of strengthening the collegiate public spaces) – mimeo.

MARQUES E.C., 2003. Redes sociais, instituições e atores políticos no governo da cidade de São Paulo. São Paulo : Annablume : Fapesp.

MARQUES, E.C., 1999. Redes Sociais e Instituições na construção do Estado e da sua permeabilidade. Revista Brasileira de Ciências Sociais - Vol. 14, n° 41 :45-67.

MONTEIRO F., 2004. Institutional performance of watershed basin committees: the Cotia-Guarapiranga and Billings-Tamanduateí cases in Sao Paulo´s Metropolitan Area . São Paulo, 2004. 146p. Dissertação (Mestrado) – Programa de Pós Graduação em Ciência Ambiental – PROCAM, Universidade de São Paulo.

MONTEIRO F., JACOBI P., 2003. Water resource management in Sao Paulo State, Brazil: an institutional perspective. World Water Forum – Madrid.

OSTROM E., 1990. Governing the Commons: The Evolution of Institutions for Collective Action. New York: Cambridge University Press.

POLANYI K., 1944. The great transformation: the political and economic origins of our time. Boston : Beacon Press.

PORTES A. 1998. Social Capital: Its Origins and Applications in Modern Sociology. Annual Review of Sociology 24(1) : 1-24.

PUTNAM R., et. al. 1993. Making Democracy Work: Civic Traditions in Modern Italy. Princeton, New Jersey: Princeton University Press.

RAVALLION M., 1997. Good and Bad Growth: the human development reports. World Development, 25(5) : 631-638.

ROCHA G., 1998. A Construção do Sistema Paulista de Gestão de Recursos Hídricos. Simpósio Internacional sobre Gestão de Recursos Hídricos. Gramado: ABRH.

SCOTT J., 1992. Social Network Analysis: a Handbook. Newbury Park, California : Sage Publications.

SEN A., 1997. What is the point of development strategy", in E. Malinvaud et alii Development strategy and management of market economy. New York : Clarendon Press / Oxford, vol. 1.

SEN A., 1999. Desenvovlimento como liberdade. São Paulo, : Cia das letras.

TENDLER J., 1997. Good Government in the Tropics. Baltimore, MD: Johns Hopkins University Press.

UPHOFF N., 2000. Understanding Social Capital: learning from the Analysis and Experience of Participation in Dasgupta e Serageldin "Social Capital, a Multifaceted Perspective". Washington, D.C.: The International Bank for Reconstruction and Development/The World Bank.

WOOLCOCK M., NARAYAN D., 1999. Social Capital: implications for development theory, research and policy (mimeo).