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## **Water Management in Shared Legal and Institutional Cases: Who Is Managing What Water?\***

**Abstract:** Countries which have implemented for the first time or reformulated their domestic water management policies after the 1970s-1980s have had the opportunity to choose from a series of water management models around the world. In 1997, the Brazilian Federal State defined (Law 9,433) the new water management model to be implemented throughout the country. However, since the 1988 Federal Constitution, several Brazilian States had already approved state legislation (re)organizing their water management systems. The result is a mosaic of water management institutions, which, in some river basins, arguably hold overlapping functions and responsibilities. Why have these overlapping water management models persisted? Why have they not been consolidated in one or just replaced one by another? The answers to these questions may shed some light over governments' choices of water management models and the paths which the implementation of these models have followed (and are following). This discussion will be illustrated by the Piracicaba, Capivari and Jundiá River Basin case.

**Keywords:** water management; institutions; river basin committees; Brazil.

### **Introduction**

Distinct models of water management have been implemented in different regions of the world to address similar water problems. Spain and France manage their waters at the river basin level, since the 1920s and 1960s, respectively, applying a decentralized approach. England, on the other hand, since the 1970s, has adopted the region as its unit of water management and decided to privatize the system. Other countries, regions and provinces around the world have adopted other variances of water management decentralization, some have a centralized approach to water management, and others do not have an autonomous approach to water management. The different water management systems are obviously influenced by the particular social, economic, political, historical and environmental contexts within which they are developed and implemented.

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In 1997, the Brazilian Federal government passed Law 9,433, which constituted a novel effort to structure a decentralized water management system across the country. The legislation sought to foster broader societal involvement in water management efforts, and ultimately place the decision-making at the river basin level. The model adopted encompasses the integrated management of multiple water uses, giving priority to human consumption, and mandates the implementation of water charges (*cobrança*). The implementation of this decentralized and participatory model requires a close collaboration and negotiation among the different government levels – federal, state and municipal, as well as between these and water users and civil society organizations. This collaboration and negotiation is to be developed within River Basin Committees, where representatives from all the above mentioned segments are to participate.

Despite the legislative and implementation dynamics mentioned at the federal level, since the 1988 Federal Constitution, several Brazilian States had approved state legislation (re)organizing their own water management systems. Most of them already encompassed the basic principles later adopted at the federal level. The implementation of these similar principles, however, did not preclude the creation of somewhat different water management systems, which included distinct institutions and organizational designs, although maintaining the river basin as the unit of planning and intervention.<sup>1</sup>

This paper will address the reasons underlying the choice of one new management model over another or over an already existing one, illustrated by the analysis of the Piracicaba, Capivari & Jundiaí Rivers Basin (PCJ Basin). The discussion of this case study is relevant to several bodies of literature, such as decentralization, public policy, civil society participation (and allegedly democratization) and, more crucially, institutionalism. The paper attempts to explain the institutional dynamics in the PCJ Basin drawing from different institutional approaches.<sup>2</sup>

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<sup>1</sup> Some states have actually rejected this water management system, by refusing to adopt an autonomous management approach to water resources, by adopting a more state centralized water management system, or by implementing institutions different from the ones federally established (consortia *versus* river basin committees).

<sup>2</sup> The research in the PCJ Basin was conducted in June 2002 under the *Projeto Marca D'Água*. This project is a long-term study (5-10 years), which seeks to investigate the institutional and social aspects of the water management decentralization in diverse physical, social, and organizational contexts across Brazil. The project seeks to better understand the decision-making process used by emerging river basin organizations, and how factors such as the type of water-related problem and the level of social organization influenced their creation and their management activities. The *Projeto Marca d'Água* research team has currently over 30 collaborators from institutions in Brazil and the United States of

The PCJ Basin constitutes an interesting ‘natural laboratory for the study of water management in Brazil’,<sup>3</sup> due to the co-existence of three river basin management organizations implemented at different times, for different reasons, but with, arguably, the same mandates for the same basin: the PCJ Consortium (1989), the PCJ State Committee (1991) and the PCJ Federal Committee (2002).

## **The Geographical and Political Contexts**

### 1. The River Basin(s)

The Piracicaba River stretches through 250 km from the springs of the Jaguari and Camanducaia rivers – whose confluence creates the Piracicaba River – in the Serra da Mantiqueira, in the State of Minas Gerais, to the Tietê River in the State of São Paulo. The Capivari and Jundiaí Rivers, on the other hand, are totally situated within the State of São Paulo, running through 180 and 125 km, respectively, from their springs to their mouth also in the Tietê River. The three river basins combined cover approximately 15,320 km<sup>2</sup>, 92% of which falls under the jurisdiction of the State of São Paulo and the remaining 8% under the State of Minas Gerais (COPLAENGE, 1999). Although hydrologically independent, the three river basins have been connected by human made water diversions and pollution activities. The main linkage lies in the municipality of Campinas, which is situated in the divide between the Piracicaba and Capivari Rivers Basins. Campinas obtains its water supply from the Piracicaba River Basin (Atibaia River) and discharges its effluents into the Capivari River Basin. The city of Jundiaí also obtains its water supply from the Atibaia River, consequently connecting the Piracicaba and Jundiaí River Basins. The PCJ Basin encompasses 71 municipalities in the State of São Paulo and 4 in the State of Minas Gerais. Of the 71 São Paulo municipalities, only 58 have their capital within the PCJ Basin. Approximately 4.22 million people (2000) live in these 58 municipalities: 94.2% in urban centers, and of these 55% in the Campinas Metropolitan Region (COPLAENGE, 1999: 18). On the Minas Gerais side, around 50,000 people live in the river basin, of which 60% are concentrated in urban centers (*ibid.*).

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America, representing a diverse group of universities, governmental agencies, and non-governmental organizations. During 2001-2002, baseline and follow-up studies were conducted in 27 basins throughout Brazil. The results of the first phase were published in 2003.

<sup>3</sup> This term was first used by Rosa Formiga-Johnsson in *Projeto Marca d'Água's* internal report on the Paraíba do Sul River Basin (Gruben *et al.*, 2002).

## 2. The State of São Paulo

The idea of creating a water management system and some sort of water management participatory organization was discussed technically and politically throughout the 1970s and 1980s in the State of São Paulo as well as at the federal level. The State of São Paulo Department of Water and Electrical Energy (DAEE) organized in 1982 a series of federal and state meetings of water management agencies. This discussion process resulted, at the state level, in the creation, in 1987 (State Decree 27,576), of the Water Resources State Council (WRSC) and the Coordinating Committee of the Water Resources State Plan and Management System. The DAEE initiative voiced the concerns associated with the growing deterioration of water resources and the escalation of tensions between different water users in several regions of the State of São Paulo. The Piracicaba River Basin was an example where tensions between water users associated with water quantity and quality problems were escalating. A month after its creation, the WRSC declared the situation in the Piracicaba River Basin as critical, giving 120 days for the newly established Technical Group on the Piracicaba River Basin to submit priority programs for an intervention in the basin. The Piracicaba River Basin was initially considered a management unit in and of itself. In 1988, the Governor declared the Piracicaba River Basin as the basic water management model for the whole State of São Paulo (Decree 24,489). These concerns and dynamics brought the discussion on the future of water resources and their management to the political agenda.

At the federal level, the results of this process were reflected in the 1988 Federal Constitution, where an explicit reference to the need of implementing a National Water Resources Management System (NWRMS) was included. The Federal Constitution also explicitly established water resources jurisdictions between the States and the Union: under Union jurisdiction are lakes, rivers and any other water courses in federal land, or which cross more than one State or constitute borders with other countries; under State jurisdiction are surface or underground waters stored, sprung and crossing State land, with the legal exceptions associated with the existence of works done by the Union in any of these State water bodies (Articles 20 and 26).

This *momentum* at the state and federal levels led to the inclusion of a whole section dedicated to water resources in the 1989 São Paulo Constitution. An integrated water resources management system congregating state and municipal agencies and civil society became constitutionally established, as well as the State's responsibility to

provide the financial and institutional means to assure the implementation of that system and its associated water management principles – human consumption priority; multiple uses approach; decentralized, participatory and integrated management; implementation of water charges; and the allocation of the existing hydroelectricity royalties to a State Water Resources Fund (SWRF) to be spent on water-related works and investments (Articles 205 to 213).

In 1991, the State of São Paulo approved the Water Resources State Plan (Decree 32,954), which was the first technical document on water resources, presenting the critical situation of the future of the State's water resources, if demand and population growth continued at the same rate as then. Subsequently, Law 7,663/91 was passed, defining the State of São Paulo Water Policy and creating the State's Water Management System (SWMS). The São Paulo Water Law established that the State Water Resources Plan would divide the State in hydrographic units, with size and characteristics allowing for and justifying the decentralized management of their associated water resources (Article 20). The SWMS is constituted by the State Water Resources Council and the River Basins Committees. The latter are responsible for managing each hydrographic unit previously defined and should include an equal number of states, municipal and organized civil society representatives (Article 24). By this time, the PCJ Basin was already taken as one hydrographic unit and became consequently one of the 22 Water Resources Management Units (WRMU) defined in the State. The PCJ-WRMU encompasses, obviously, only the 92% of the PCJ Basin's total area which lies within the State of São Paulo. It should be noted that the São Paulo Water Law established specifically the creation of the PCJ Basin Committee, along with the Alto Tietê River Basin one.

### 3. The Union

As mentioned above, according to the 1988 Federal Constitution, lakes, rivers and any other water courses that cross more than one State are under federal jurisdiction. Consequently, the Jaguari and Camanducaia Rivers and, arguably, the Piracicaba River itself, are under federal jurisdiction. The Federal Water Law (Law 9,443/97) embodied basically the same principles consecrated in the São Paulo Water Law. Similarly, a National Water Resources Management System (NWRMS) constituted by the National Water Agency (Law 9,984/00), the National Water Resources Council (NWRC), the States' Water Resources Councils, the River Basin Committees, the Water Agencies and

the federal, state and municipal agencies with water-related functions, was instituted. Unlike the São Paulo River Basin Committees, however, the Federal Water Law and the NWRC's Resolution 5 (2000) established a somewhat different breakup of the participating segments in the River Basin Committees: public representatives, including the Union, the states, the Federal State and the municipalities, should not exceed 40% of the overall number of members; civil society representatives should reflect the population of each state represented, with, at least, 20% of the overall number of members; and water users' representatives should equal 40% of the overall number of members (Article 8).

## **The Institutions**

### 1. The PCJ Basin Inter-Municipal Consortium (PCJ Consortium)

The Piracicaba River Basin became throughout the decades an exemplary case: an inspiration to some, a management model to others, a part of the Brazilian water management history to all. This epicenter originated from local, regional and state dynamics, which accumulated and escalated, resulting in an unprecedented mobilization around water resources.

The first visible consequences of pollution in the Piracicaba River – fish mortality – occurred in the 1950s. The Piracicaba community, including University, Schools and the Mayors, provided the means to identify the sources of pollution and to control some of them – sugar cane plants, industrial plants and domestic effluents. These concerns were exacerbated with the discussion, during the 1960s, of the water diversion being studied and planned from the Piracicaba River springs to the São Paulo Metropolitan Region (SPMR). This diversion – *Sistema de Cantareira* – was implemented in the 1970s and currently supplies 60% of the SPMR population. The *Sistema de Cantareira* transfers 31 m<sup>3</sup>/s from the Piracicaba River Basin into the SPMR (except during the dry season). In 1977, the first Ecological Protest Square in Brazil was inaugurated in Piracicaba to stage the 'Funeral of the Piracicaba River'. It is extremely interesting that this mobilization and protests took place still under the military regime, and were not crushed nor did retaliations occur. Maybe part of the explanation lies in the fact that the mobilization was not confrontational towards state water management agencies nor was it merely a grassroots movement deprived of technical expertise. In fact, the state agencies' technical experts participated in the protest, providing legitimacy and

technical information to justify the movement. The Engineering as well as the Agricultural Schools also provided alternative reports on the issues being discussed and ‘translated’ the technical reports into accessible language, so that the population at large could understand what was at stake and participate in an informed manner. Moreover, this mobilization had the support of the local media (newspapers and radio stations), the local authorities (municipalities), the state agencies’ local offices, schools, professional associations, and local individualities.

The protest movement was not only wide (horizontal) across the social, economic and political spectrum, but also deep (vertical), in a bottom-up direction towards the State Capital, São Paulo, and as far as the Federal Capital: Brasília. In 1983, a Non-Governmental Organization (NGO) – the Coordinating Council of the Civil Society Organizations – initiated the *Year 2000 Campaign*. Concomitantly, the Piracicaba Association of Engineers and Architects created hydraulic, sanitation and environment sections within its structure, which drafted the ‘Letter of Demands to the Orestes Quércia Government’ and sent it to the State Governor. The Piracicaba community’s demands were stated in this ‘Letter’ and concrete actions to resolve the problems identified were suggested. This process peaked in 1987, during the federal and state democratic constitutional processes, placing water resources in the political agenda.

By 1988 the movement had gained a parliamentary front with two state and one federal deputies lobbying on its behalf. In that same year, one of the above-mentioned state parliamentary deputies became the Mayor of Piracicaba. Following up on one of the demands stated in the Letter to the Governor – the creation of an inter-municipal organization – the Piracicaba Mayor led the formation process of the PCJ Inter-Municipal Consortium. Initially, only 11 municipalities, from the Piracicaba and Capivari River Basins, joined. It should be noted at this stage that other organizational possibilities existed and were considered, such as an inter-municipal authority, a public company, a mixed company, a foundation, etc. Nevertheless, the Technical Commission responsible for researching the several options decided for the Consortium, which in reality is a private association, and seemed to provide the quickest way to create a regional organization of Mayors. Moreover, there were already some interesting experiences of Inter-Municipal Consortia, which dealt with specific environmental issues, such as reforestation, waste management, or shared machinery ownership.

The Consortium has evolved from its initial structure and geographical scope in the last decade. Since 1996, the Consortium became open to municipalities from the Piracicaba, Capivari and Jundiá River Basins, including those from the State of Minas Gerais, as well as to public, private or mixed companies developing water-related activities within these basins, changing its character from an inter-municipal association to a water users association. Since 1998, the advisory Civil Society Council obtained the right to one vote, without the financial obligation to contribute as the other members of the Consortium. The Civil Society Council faced several participation problems throughout the years due to its unstructured nature, and in 1993, an organizational and structuring process across the region unfolded, culminating in 1994 with the creation of the Forum of the Piracicaba, Capivari and Jundiá Rivers' Civil Society. This process has facilitated a stronger participation in the Consortium.

## 2. The PCJ Rivers Basins Committee (CBH-PCJ)

The creation of the CBH-PCJ, as stated above, was established by the São Paulo Water Law in 1991. In 1991, the State created a Working Group with the Consortium to study and identify potential integrated actions and elaborate an investment program to be presented to international agents and the Federal Government. In 1992, an Executive Group was created under the Energy and Sanitation Secretary of State, with a mandate to draft the Statutes of the Piracicaba and Alto Tietê River Basin Committees. The research and reports were developed by a team of technical experts from the Electric Energy and Water Department (DAEE), the Environment Secretary of State (Environmental Planning Coordination) and the Foundation for Public Administration Development (FUNDAP). This team's main objective was to convince all those involved that this was not an imposed process, but one that needed to be constructed with their participation.<sup>4</sup>

The CBH-PCJ formation process was gradual and extremely negotiated. On the one hand, a negotiated political, economic and social structure to deal with water resources issues in the region had already been created. On the other hand, the CBH-PCJ proposed a radically different structure of membership. The results were mixed. It was decided that the CBH-PCJ would encompass the three river basins within

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<sup>4</sup> The fact that the team felt this need already constitutes a preliminary indicator of a top-down strategy.



the State of São Paulo border, maintaining therefore the management and planning unit the Consortium had adopted. But an effort had to be made to clarify and define the different roles to be played by the *Consortium* and the CBH, in order to convince the different representatives and actors of their non-competitive nature. The CBH was politically important for the region: it had been legally created; it had been legally declared as a model for the State; it would create another forum of discussion, where both municipal and state representatives legally had to participate, as well as civil society representatives. The CBH did not have financial autonomy as the Consortium did, but it would have access to a share of the State Water Resources Fund (SWRF) and decide its allocation. Moreover, the CBH-PCJ Statutes specifically and explicitly refer to the Consortium as an institution that needs to be consulted in the water resources management process of the PCJ Basin. The CBH-PCJ was implemented in 1993, becoming consequently the first River Basin Committee in the State of São Paulo.

#### CBH-PCJ Membership and Voting Structures

Segments	Members	Votes
State	16	16
Municipalities	58	16
Civil Society	30	16
<i>Water users</i>		8
<i>Universities, technical schools, research and development centers</i>		2
<i>Labor unions, technical non-governmental, and communitarian associations</i>		2
<i>Environmental organizations</i>		4
<b>Total</b>	<b>104</b>	<b>48</b>

The Consortium is currently a member of the CBH-PCJ, occupying one of the civil society seats since 1997. Until then, it lobbied the CBH through the municipalities, representing them in the Technical Working Groups.

### 3. The PCJ Rivers Basins Committee under Federal Jurisdiction (PCJ Federal)

Since, as described above, the PCJ Basin does have some of its springs in the State of Minas Gerais, a River Basin Committee under Federal Jurisdiction was created by Presidential Decree (May 20, 2002), according to the Federal Water Law and the NWRC's Resolution 5 (2000). The PCJ Federal has jurisdiction, according to its Statutes (Article 1), over the PCJ Basin as a whole. Article 3, however, states that its jurisdiction is actually over rivers under Federal jurisdiction and rivers, which although under State jurisdiction, do not have a River Basin Committee implemented.

## PCJ Federal Membership and Voting Structures

Segments	Members = Votes		
	São Paulo	Minas Gerais	Total
Public 'executive powers'	12 <sup>5</sup>	5	20
<i>Union</i>	–	–	3
<i>States of São Paulo and Minas Gerais</i>	4	3	
<i>Municipalities</i>	8	2	
Water users <sup>6</sup>	17 <sup>7</sup>	3	20
<i>Companies responsible for urban water supply and effluents</i>	6		
<i>Industries and services, including mining companies</i>	6	1	
<i>Irrigators, agro-industry, including raising cattle</i>	3	1	
<i>Hydroelectricity companies</i>	1		
<i>Hydro-transportation companies</i>	1		
<i>Fishing, tourism, and other non-consumptive uses</i>		1	
Civil Society	9 <sup>8</sup>	1	10
<i>Consortia and inter-municipal river basin associations</i>			
<i>Technical, educational or research org. with water-related activities</i>			
<i>NGOs with environmental or water specific interests, such as environmental, social and cultural, social movements and community interests organizations</i>			
<b>Total</b>	<b>38</b>	<b>9</b>	<b>50</b>

Similarly to the CBH-PCJ implementation process, the PCJ Federal process has been negotiated and gradual. A concern with engaging the two other basin organizations in the process has dictated some of the procedures and the actual contents of the Statutes, as seen above. The PCJ Consortium had, since 1999, been working with the National Water Resources Secretary of State, and afterwards with the National Water Agency, on an analysis of the potential articulation among the State of Minas Gerais (MG), the State of São Paulo (SP) and the federal legislation on water resources management (Lahóz, 2002) for the PCJ Basin.

<sup>5</sup> The representatives of the State of São Paulo state agencies and municipalities are chosen by the CBH-PCJ Assembly.

<sup>6</sup> The water users' participation will be done by water users associations. These associations, however, may choose any individual water user to represent their interests, including a non-associated water user. This stipulation is clearly a concession towards the State of São Paulo Water Law, which requires that water users be represented by associations. This requirement does not exist at the Federal level.

<sup>7</sup> Eight of these members are water users' voting representatives in the CBH-PCJ.

<sup>8</sup> Despite the 'federal' breakup of the civil society segment, the São Paulo representatives follow the State's breakup: consortia and inter-municipal river basin associations (1 representative); universities, technical schools, research and development centers (2 representatives); labor unions, technical non-governmental and communitarian associations (2 representatives); and environmental organizations (4 representatives). The voting representatives in the CBH-PCJ are the representatives in the PCJ Federal.

**Comparative Table of the PCJ Water Management Institutions**

	<b>PCJ Consortium</b>	<b>CBH-PCJ</b>	<b>PCJ Federal</b>
<b>Direct Causes</b>	Pollution and scarcity Regional mobilization Piracicaba Mayor	São Paulo Water Law (1991)	Federal Water Law (1997/2000)
<b>Date of Creation</b>	1989	1991 (1993)	2002 (2003)
<b>Geographical Area</b>	PCJ Basin	WRMU-PCJ	PCJ Basin
<b>Nature of Institution</b>	Civil Society Organization (voluntary)	State Organization (legal)	Federal Organization (legal)
<b>Management Model</b>	Participation Integration	Participation Decentralization Integration	Participation Decentralization Integration
<b>Membership</b>	38 SP municipalities 2 MG municipalities 32 water users Civil Society Council	58 municipalities 30 from civil society 16 from state agencies	Union: 3 Municipalities: 8 (SP), 2 (MG) State agencies: 4 (SP), 3 (MG) Water users: 17 (SP), 3 (MG) Civil society: 9 (SP), 1 (MG)
<b>Voting Structure</b>	1 member, 1 vote	Each segment has 1/3 of the total number of votes	Public 'executive powers': 20 Water users = 20 Civil society = 10
<b>Mandate</b>	1\ to promote, improve and control the sanitation and water usage conditions in the PCJ 2\ to provide technical and financial support to the SWRMS and the CBH-PCJ, as well as to the NWRMS	1\ to apply the water management principles established by law: river basin as the unit of analysis, water charges, decentralized, participatory and integrated management, and multiple uses approach, in permanent articulation with the PCJ Federal 2\ to promote the compatibility of regional development with environmental protection 3\ to support and participate in the implementation of the State Sanitation Policy	1\ to apply the water management principles established by law: river basin as the unit of analysis, water charges, decentralized, participatory and integrated management, and multiple uses approach, in close articulation with the CBH-PCJ and the Minas Gerais Committee to be created 2\ to promote the articulation of federal, state, municipal and regional plans, studies and investment programs in order to conserve, protect, restore and manage the multiple and rational use of water resources
<b>Financial Resources</b>	Members' Quotas By Application	State Water Resources Fund	National Water Agency

## **Institutional Coexistence**

The interesting theoretical and empirical questions this case poses lie in the coexistence of these three organizations with more or less the same mandates, actors and areas of intervention. Moreover, the PCJ Consortium participates as civil society in the other two organizations, and the State of São Paulo water users and civil society representatives who are voting members of the CBH-PCJ are automatically members of the PCJ Federal. On the one hand, the reasons underlying the ‘cumulative’ creation of these water management organizations question the institutional accounts of organizational formation. On the other hand, this coexistence, although a reflection of a dynamic region and a result of a negotiated and arguably close collaboration between the different organizations, highlights several issues related to decentralization, participation and public policy making.

### 1. The theoretical questions or why were these institutions created?

Some theorists may argue that the answer to this question could be satisfactorily provided by explaining institutions as a result of temporal sorting, as opposed to rational competition. Temporal sorting requires that problems, solutions, decision makers and choice opportunities be available simultaneously (March and Olsen, 1989: 11-14). This approach, known as ‘garbage can model’, assumes that these elements are “independent, exogenous streams flowing through a system” (*ibid*: 12). The main problem with the model is that since there is no calibration of the different streams, things happen because certain things were in place at the same time for different reasons. Therefore, everything is explained by everything and nothing is peeled out enough to provide some sort of consistent or coherent causal mechanism. Simultaneity seems to be the sole explanatory variable, which provides extremely idiosyncratic accounts of the phenomena being studied. In the PCJ case, although simultaneity might have played a role, the ‘streams’ that led to the creation of the three basin organizations were definitely not ‘independent nor exogenous’.

Other theorists may argue that the relevance of this institutional coexistence can only be established if one links the creation of the organizations to effectiveness. Others, yet, may dismiss this whole research by stating that the main reason for this institutional dynamics was the evolution of the legal context (as an exogenous factor), pre-empting any attempt to better understand the process. In reality, defenders of these

positions are both right and wrong. Of course, linking the organizational design to effectiveness, if results were found, would incredibly strengthen the explanation, but one can already identify dynamics even before the organizations are fully implemented, or before one starts assessing its results that suggest that the organizational design may be important in and of itself. On the other hand, the legal evolution is unquestionably a determinant factor of the institutional creation path pursued, but the agents that were involved in drafting and approving the legislation were also involved in the creation of the three PCJ organizations, so the factor is not totally exogenous. And even if one would give the factor substantial explanatory power in this case, one would still be left with the odd situation of having three organizations with the same objective, actors, area of intervention and participating within each other, which the legal context does not provide an explanation for.

Historical Institutionalism and Rational Choice Institutionalism have constituted the two main strands at the core of the institutional debate throughout, at least, the last two decades. Both approaches provide explanations for institutional creation, although departing from distinct assumptions. Rational Choice Institutionalism attempts to explain why institutions are created, given the self-interests of rational individuals, who would consequently prefer to free ride than to voluntarily participate in collective actions. Therefore, for rationalist institutionalists, institutions are an apparent deviation from what the general theory predicts (Thelen, 1999: 374). ‘Apparent’, because there are rationalist explanations for their emergence. Institutions are a solution, a collective solution, to a problem. Under certain conditions, with certain incentives, even self-interested rational individuals engage in collective behavior. Historical Institutionalism departs from a different starting point, in that it attempts to understand why one observes different reactions to the same problems. In other words, why are different institutions created to deal with similar situations? In a certain way it is also an attempt to understand deviation, in the sense that these questions presuppose that a similar reaction was expected to the same *stimulus*. But the ‘difference’ in Historical Institutionalism is not ‘apparent’ as in Rational Choice, since there are distinct outcomes, which then the historical institutionalist tries to group in order to identify underlying regularities.

In the PCJ Basin, one can easily conclude that both approaches are extremely insufficient to explain the existing institutional dynamics. The rational institutionalist

would argue that the PCJ Consortium was unquestionably a solution to a problem, and that the CBH-PCJ and the PCJ Federal were created due to exogenous factors – the State of São Paulo Water Law and the Federal Water Law. However, if the problem was the same, then as soon as one institution was created the previous one should have ceased to exist, since it would have become redundant. Moreover, how could one explain the creation of the PCJ Federal in 2002 and not in any other year after 1997? As stated above, these three organizations have most of the same members, act upon most of the same area and have a similar mandate. The outcome was paradoxically the opposite of what a rational institutionalist would have predicted, not only none of the organizations ceased to exist or to function, but, moreover, each of the previous ones participated in the creation and implementation of the subsequent one(s), reflecting some sort of ‘nesting’ among the three organizations.

For the historical institutionalist, these three organizations mediate political struggles and are a result of a broader process characterized by the socio-economic-political context within which they emerged and exist. The basic socio-economic-political and environmental context is roughly the same, although the hydro-legal context did change, from a non-existing one to a state requirement and, finally, to a federal possibility. The creation/implementation of the three organizations seems to follow a legal-trail pattern. In the PCJ Consortium case, there was no water legislation *per se* and the choice had to be based on the knowledge and expertise of those involved in the process. The CBH-PCJ creation already benefited from a long, negotiated, participated institutional discussion on different designs and possibilities, culminating in a legal requirement of structure and organization. The creation of the PCJ Federal clearly reflected previous developments, processes and experiences across Brazil. On the one hand, since the actors participating in the PCJ organizations are basically the same, the historical institutionalist cannot explain why the political struggles of the same actors in the region about the same issues are mediated through three distinct river basin organizations. But, on the other hand, if one follows the individuals involved in the political struggles throughout the three processes, one is able to identify certain trends. Several of the agents involved in the Piracicaba protests, and the subsequent creation of the Consortium, were later transferred to the State Government (Parliament, Secretaries of State, State Agencies). At this level, they participated in the discussion, draft and approval of the State Water Law and lobbied for the recognition of the PCJ Basin as a State critical

example. Of these, some transferred to Brasília, as their political careers evolved and, again, they participated in the discussion, draft and approval of the Federal Water Law and, according to some, initiated the creation process of the PCJ Federal.

Despite the validity of the creation processes explained by both approaches, they are primarily concerned “with the question of how institutions shape political strategies and influence political outcomes” (Thelen and Steinmo, 1992: 7) and not with institutional coexistence. In other words, their explanations do not provide a framework to understand why and how one institutional design is chosen and survives (coexists with) the creation of another institution with a similar mandate. As an attempt to answer some of the questions either not answered or not posed by the ‘new institutionalism’ briefly presented here, several variants of Rational Choice and Historical Institutionalisms have been developed.

1. Institutional choices have been explained, for instance, by path dependency. Some rational institutional theorists, borrowing from the economists’ study of technological trajectories, conclude that certain types of institutions achieve an initial advantage over other types “and prevail even if in the long run the alternatives would have been more efficient” (Thelen, 1999: 385). The argument states that institutional choices involve ‘some elements of chance’, but once a choice is made (‘a path is taken’), then all actors adjust to the prevailing pattern. The best example of this argument is the prevalence of the ‘state’ over city-states or leagues of city-states or tribes. But, in politics, the argument does not hold completely, since “the losers do not necessarily disappear” (*ibid*: 385), and in the PCJ case, the Consortium and the CBH-PCJ, arguably the identified ‘losers’, did survive and remain active, parallel and within the PCJ Federal (the supposed institutional ‘winner’). In fact, the creation of the PCJ Federal arguably strengthens the CBH-PCJ, since part of its members have to be voting members of the latter.

2. Historical Institutionalism has tried to refine its approach to path dependency, and address the question by relaxing its deterministic tone and incorporating the notion of “critical junctures and developmental pathways” (Ikenberry *in* Thelen, 1999: 387), or ‘reactive sequences’ (Mahoney, 2000). This refinement emphasizes “the importance of timing, sequencing, and interaction of ongoing political processes” (Thelen, 1999: 392). This addition enriches the previous analyses, since the sequence becomes highlighted:

environmental protests in Piracicaba (1970s) – mobilization (1980s) – PCJ Consortium (1989) – State Water Law (1991) – CBH-PCJ (1991) – Federal Water Law (1997) – PCJ Federal (2002). The strength and interaction of the different constraints and events could explain the relation between the timing and the type of institution created. Consequently, the critical junctures would have been the environmental protests (mobilization), the State Water Law and finally the Federal Water Law. Of course this approach is not explicit on how to identify a critical juncture, which can be methodologically challenging, and lead to incorrect explanations. Moreover, it also does not address the question of institutional design or overlapping.

## 2. The empirical questions or who manages whose water?

The cases dealt with in this paper might actually appear to some as non-cases, in the sense that all three organizations embody principles of decentralization, participation, integration and some sort of water charges implementation. Nevertheless, the organizational design chosen to implement these principles and their overlapping raises issues of representation and jurisdiction, which in turn raises issues of participation, democratization, integration, water charges implementation, and of the overall water management effectiveness.

### A. Whose water?

One of the issues this institutional coexistence raises relates to each institution's jurisdiction to act and, most importantly, to collect water charges. From an initial reluctance in participating in the CBH-PCJ creation and implementation process, the PCJ Consortium became its strongest member and its executive arm. Both State and Federal legislation predict the creation of Water Agencies to execute the River Basin Committees' decisions, but so far none has been created in the PCJ Basin. The Water Agency's main objective is to implement water charges and then apply those funds to water-related works in the respective basin(s), although the decision on the allocation of the funds will rest with the Committee(s). The Federal Law explicitly allows consortia to play the role of Water Agencies for a limited period of time, until the latter are created and implemented. Consequently, and although unofficially, the Consortium has, in a certain way, been performing that role with the CBH-PCJ. A complementarity has been established, and mutual participation and co-management have characterized the most recent years. The creation of the PCJ Federal opens up a totally distinct set of



questions. First, there are, legally, no federal river basins; there are only rivers under federal jurisdiction.<sup>9</sup> Consequently, although a River Basin Committee, in reality, the Federal PCJ only has jurisdiction over the waters of the federal rivers, in this case, the Jaguari and Camanducaia Rivers and, arguably, the Piracicaba River. Second, if it implements water charges first, the CBH-PCJ cannot collect water charges on the Piracicaba, Jaguari and Camanducaia Rivers. Moreover, the charges collected would most probably be transferred to the National Water Agency and then re-allocated to the PCJ Federal (arguably, unless it created a Water Agency beforehand). If the CBH-PCJ implements water charges first, and for that it needs to create a Water Agency, there is no precedent to predict the future relations between the CBH-PCJ and the PCJ Federal. Thus, the complexity and intricacy of the institutional jurisdictions becomes extremely important and crucial to actually manage the PCJ Basin.

### *B. Who manages?*

Institutions, themselves, are not neutral arrangements, in the sense that they “reflect, and also reproduce and magnify, particular patterns of power distribution” (Thelen, 1999: 394). This point is very important to understand some of the dynamics underlying the creation and performance of institutions. In the PCJ case, the Consortium is a voluntary association where each associate has one vote. This institution does not hold regulatory power, because there are no coercive mechanisms, nor legal bindings (Scott, 2001). Associates are free to participate or exit as they see fit. The CBH-PCJ and the PCJ Federal, on the other hand, do hold regulatory power and are legally sanctioned, since they are a part of the State and the National Water Management Systems, respectively. The River Basin Committees created follow a specific form facilitating “the organization and empowerment of certain groups while disarticulating and marginalizing others” (Thelen, 1999: 394). In these Committees, there are actors that would not be able to participate in the water management decision making process if it weren’t for these institutions. At the same time, the different segments’ participation is regulated, although in different ways in each institution. The Consortium is dominated by municipalities and, recently, water users, and civil society’s participation has an advisory nature. The CBH-PCJ, on the contrary, requires the participation of civil

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<sup>9</sup> Although the PCJ Federal Statutes state that its area of intervention is the whole PCJ Basin, further on in the document, the federal nature is attributed only to the watercourse.

society, sharing the votes within the institution in equal parts with the municipalities and the state agencies. However, private water users are ‘boxed’ within civil society, and public water users within the other two segments. Also, both municipalities and state agencies are public ‘executive powers’. So, there is some bias against civil society, defined as non-public actors and non-economic users. The PCJ Federal, on the other hand, also requires the participation of civil society, but separates it from the water users and these include public and private actors. Arguably, the federal segmentation makes more sense and provides a more democratic and participatory *forum*. However, since the Consortium participates in both state and federal committees, the municipalities and water users it represents are over-represented, against the possibility of a distinct civil society interest being represented. Moreover, the informational imbalance and the technological knowledge disparity, aggravated by the financial resources each type of actor has access to, tends to reproduce the power disparities and patterns already found in the socio-economic-political context. The outcome, in the Brazilian case in general, and in the PCJ case in particular, is still inconclusive: there is no significant evidence, so far, that the powers already marginalized or empowered in the society at large remain marginalized or empowered in these Committees or not, but there is already enough information to voice some concerns.

### **Conclusions: entrepreneurs and configurations, or carriers and networks**

The explanation of the dynamics taking place in the PCJ Basin may actually be found in a different perspective in ‘the patterns of power distribution’. If one includes ideas as a causal factor in explaining political change, in this case, the decision to create a State and then Federal Committees brings in the concept of power in the (federal) state-society relation. The Union, as well as the State of São Paulo, had institutionally set the parameters of the National and State Water Management Systems, which became sources of political power. The Consortium is not a part of this system, therefore did not provide ‘power’ in the eyes of the Union and the State. As Hall argues, “[o]rganized interests... do not simply ‘exert power’; they acquire it by trying to influence the political discourse of the day” (1993: 290); or in the case under analysis, the actors participating in the Consortium did not simply ‘exert power’; they first acquired it by lobbying the State process and then by participating in the creation of the CBH-PCJ and later of the PCJ Federal. Although Blyth points out that “ideas themselves do not

ultimately determine the outcome” (1997: 235), he does state that “if it is counterfactually demonstrated that the change could not have occurred without the ideas”, then “[a]ttributing a change in behavior to a change in ideas is tenable” (*ibid*: 236). If the State and the National Water Management Systems did not exist and did not prescribe a specific type of institution – the river basin committees – there would have been no reason to create the Committees after having created the Consortium.<sup>10</sup>

But more important is to identify and understand the motivations and actions of who ‘had’ the idea, who presented, nourished and implemented it. Some have identified this agent as an institutional or political entrepreneur who brings institutional innovation, in this case, into the legal-social and political system, and afterwards into the institutions created themselves (Sheingate, 2001). Additionally, the ‘longitudinal configurations’ (Lieberman, 2001), meaning the processes of policy-making, in this case, seem to hold a key part of the explanation. The policy-making process from the Piracicaba municipality and the PCJ Basin to the State of São Paulo legislative and executive bodies to the Federal State legislative and executive bodies reflects a path through which certain actors ‘floated’ and ‘carried’ their ideas and institutional preferences.

The PCJ river basin is considered by many the epicenter of the water management dynamics in Brazil. The agents in this region have traveled abroad to learn other ways of managing water resources at the river basin level, have participated in the state and federal constitutional and hydro-legislative processes, have taught others what they have learnt and are still challenging and exploring to the limits the frameworks they have themselves helped to create. This energy, dynamics and results suggest three main avenues of research, which are interconnected: ideas as water management institutional designs; agents as the carriers-‘implementators’ of those ideas; and networks through which these ideas flow and which these agents belong to. Extensive research is needed to track these ideas’ paths and map these networks; however, it seems an essential task to better understand the multi-level institutional creation parallel to the horizontal geographical, social, political, technical and economic contexts. These preliminary

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<sup>10</sup> ‘Ideas’ are being reduced, in this case, to the ‘type of institution’ or ‘institutional design’ chosen and implemented, which obviously raises the problem of the definitional ambiguity of ideas. Ideas seem to be almost anything one wants them to be: from overarching goals, to techniques and instruments (Hall, 1993), from road maps to causal beliefs and shared principles (Goldstein and Keohane, 1993), from ideology to institutional designs.

findings do not, in anyway, want to suggest that that particular group of actors had the power to change the institutional and legal landscape of the PCJ Basin, the State of São Paulo and Brazil. This research and its analysis have helped bring to light the coexistence and operational importance of parallel geographical, social, technical and organizational networks to which this group of actors belong to and which they have used (intentionally or not) to pursue their objectives on water management. Some have actually unofficially suggested that the State of São Paulo Water Law was passed only because these actors tapped into their masonry affiliation to obtain its approval in parliament.

The design of river basin water management institutions seems crucial to understand their internal and external dynamics, including evolution and change, which institutional theories have not dealt with in a satisfactory manner. Moreover, this case-study suggests that the institutional design might be the outcome of a more complex and web-like political process, involving the identification of the existing and known designs, the carriers' nature and role in the context being analyzed, and the networks through which these 'ideas' flow and are disseminated, following and identifying the carriers' own networks.

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