

Challenges to promote a common approach: dialogue on water governance in São Paulo Macrometropolis (Brazil)

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Abstract

Brazil has been suffering serious situations of water scarcity in several regions, and the most dramatic case was the recent (2014-2015) drought in the São Paulo Macrometropolis, which comprises more than 170 municipalities (including São Paulo metropolitan region) and more than 35 million inhabitants. Water scarcity in this region, due to increasingly unsustainable water use is affected mainly by two factors: the rise of climate impacts and pollution of water sources (linked to deficit sanitation services). This is directly related to the impacts of the ecosystems' deterioration caused by the asymmetric conditions of urbanization and unequal access to drinking water and basic sanitation. This consideration leads us to dialogue with the contemporary debates on water as a commons or commodity, related to the dynamics of sharing of responsibility for water supply between the state, the private sector, and the citizens. These debates on the conflicting approaches over water supply governance take place between the public utility, the private sector, and a new culture of water based on strong considerations on sustainability and equitable access. In this paper we analyze the impacts of the water crisis and the potential of strengthening initiatives to advance in policies that emphasize a logic of commons. The National Water Law in Brazil has existed since 1997. It incorporates modern water resources management principles. The need to manage conflicts arising from water use priorities led to incorporate civil society actors within "Water basin committees", created by this law. Water governance thus needs to tackle sustainability and social aspects, leaving behind the managerial perspective. Also, the National Law defines the river basin as a territorial unit for water territorial planning, and water as a scarce resource which has economic value, identifying multiple uses and user rights.

Introduction

Water as Common or Commodity?

In the last two decades, there has been an important change on the way water issues are understood globally. Since the water war in Cochabamba, Bolivia, where privatization was halted by population's mass mobilization - with an important role of indigenous voices -- access to water is increasingly considered an universal right. In this regard, the UN Human Right to Water and Sanitation resolution, passed in 2010, was an important milestone as it recognized access to clean water as "a prerequisite for the realization of other human rights" (UN, 2010).

More recently, as a development of the rights approach, a number of organizations, both local and global, such as The Blue Planet Project, set out to seek the establishment of water as part of a global commons. That struggle lies within an understanding that a common is certain kind of good, with specific intrinsic

characteristics - namely rivalry and non-excludability - that make it neither public nor private. The "resource" lenses leads us to put effort towards the political process of categorization. Moreover, it does not fully consider cultural and social relationships, which are fundamental to govern a certain resource as a common.

But what does it mean to govern water as a common? The political scientist Elinor Ostrom, more often known for her contributions to the new institutional economics, has pioneered work on collective action and community based organizations to manage common pool resources, as a viable means to reach their long term preservation. The work of Ostrom is especially important because it defied the mainstream economics understanding that, without state regulation or privatization, common resources will always be over exploited until exhaustion by their self-interested users. Her empiric work proved that, given a set of conditions, actors are not trapped in the prisoner's dilemma and are able to cooperate to manage from forests, grazing lands and fisheries to irrigation systems and mainframe computers.

A case study that perfectly illustrates Ostrom's work is the one on irrigation systems in Nepal. The focus of her study was on the performance of the traditional Farmer Managed Irrigation Systems (FMIS) as contrasted to the Agency Managed Irrigation Systems (AMIS). What she found was that low tech farmer-managed irrigation systems achieved performance levels above the high-tech government operated systems. That was not a trivial finding since

"problems of collective action are potentially even more difficult on irrigation systems (...) because farmers using surface irrigation systems face strong asymmetries among themselves created by the physical differences at the head end versus the tail end of an irrigation system." (Ostrom et al, 1994, pg.198)

Nevertheless, in Nepal's case there was multi-level cooperation in the traditional system, which led to greater water adequacy at both head and tail of the river as well as higher crop intensity for farmers at the tail. That is because farmers were able to self-organize, chose leaders, craft rules, norms, and generate incentives that helped them overcome the coordination problem and boost collective action towards the maintenance of the water source upon which they relied (Ostrom et al, 1994).

Ostrom's analytical proposal represents a kind of turn point on neo-institutionalism¹ approach, especially regarding the "tragedy of commons"² perspective. The main point of her proposal was precisely to demonstrate that a set of rules could be a drive to individuals to overcome opportunistic behavior and to adopt cooperative conduct. Moreover, she confronted the mainstream believe on homo oeconomicus' instrumental and selfish behavior, demonstrating that people with the correct institutional enforcement can be engaged in cooperative practices whereby better outcomes are reached. Ostrom operated an inversion on Hardin's ideas showing that the rules itself could also produce "perverse incentives", which could conduce to the "destruction of commons" (Dardot and Laval, 2017).

Although the work of Ostrom has brought an enormous contribution on thinking the commons, she is still influenced by the economic reasoning over resources as the ontological basis of her studies is the neoclassical economic theory of rational action. Her institutionalism remained dependent on the naturalist framework, considering that certain resources have characteristics which make collective management the most effective alternative, in comparison to either market and state. The "common", as approached by the institutional political economy, becomes a mere qualifier to be applied to the resources which are already "common" by nature (Dardot and Laval , 2017).

In that sense, a new reading of "commons", supported by a theoretic perspective that focus on collective principles of organization, can be used to understand water issues, and to design governance mechanisms accordingly.

Nowadays, the commons are strongly connected to social and political struggles and practices that emerged as a response to neoliberal States and the challenges of increasing social inequality and destruction of natural environments. This new wave of social movements has shown a remarkable ability to integrate a critique of political

¹Neo-institutionalism, as defined by Douglas C. North (1990) can be understood as analytical framework which enables us to approach the economics phenomenon as product of institutional influences that guide both the behaviors and the "structure human interactions".

² Hardin's "tragedy of the commons" (1968) is one of the first references remembered when we approach the commons. Such a thesis is based on the belief that users of common resources would always seek to maximize their individual gains and would be unable to negotiate a situation that benefits the collective. In this way, the only possible solution for the preservation of the common would be regulation through ownership (public or private), able to manage resources by imposing rules and control. Elinor Ostrom (1990) will dismantle the basic argumentation of the Tragedy of the Commons by pointing out misguided assumptions: that users are necessarily unaware of both the resources being handled and the ability to negotiate between them.

economy and the issue of environmental degradation in their political agenda. In this context, the word “common”, as an adjective or noun, in the singular or plural, has begun to work as a flag of mobilization, a slogan of resistance, the guiding thread of an uprising alternative. And the current convergence of mobilizations against neoliberalism in the name of the common marks a new moment in the history of social struggles in a global scale (Dardot and Laval, 2017).

To answer to those empirical demands we have witnessed a return of the common on the contemporary academic debate (Harvey, 2014; Hardt and Negri, 2016; Dardot and Laval, 2017; Bauwens et al, 2017; Federice, 2017;). These new academic perspectives, following the new wave of social movements, understand commons not merely as “pool resources”, as they were treated by Ostrom, but as a “political principle”. In this perspective, is not exaggerated to state that, even in the academic debate, the common has been recognized as the defining principle of alternative political movements in the 21st century.

Mobilizations around the commons are looking for a new operative concept of practice towards new forms of democratic governance. Despite the plurality of genealogical origins that can be claimed for the interpretation of commons (philosophical, religious, classical, and so on), the return of the concept is mainly focused on a broader definition, in which it is not about a resource, a thing (Dardot and Laval, 2017; Hardt and Negri, 2009, 2018; Bauwens et al, 2017). It does not relates to having things in common, nor to the sharing of common things, but to the shared activities, situations, contexts through which people shape their relationship to the material world but also themselves in ways which they themselves must decide. Thus, the common is not conceptualized as an essence of man or as inherent in nature, but as a practical activity of commoning, of defining what will be shared in common and what rules will govern the commons' citizen-subjects (Dardot and Laval, 2017).

This new perspective claims for an institutional transformation, that could enable us to institute the common trough a new juridical arrangement which recognizes the category of the non-appropriable, the things that are out of the realm of (any type) of property.

From an institutional point of view, while institutions enable us to maintain norms and practices for long periods of time, they also threaten us with the risk of their crystallization. Therefore, the instituted dimension of the institutions need to be

constantly supported by citizens, and, at the same time, allow them to keep the collective capacity to create new institutional forms. Thus, the institutions are approached as an ongoing praxis, whereby the group creates itself through its cooperation and co-activity even as it creates and continuously recreates institutions and rules. This constant monitoring between the instituted and the act of instituting is fundamental to improve democratic governance. Similarly, the power of the group in creating commons, must be collectively managed to avoid undesirable constraints to its members by centralized decision-makers. They claim for a model of governance where the power of the individuals must be limited by all the other individuals so that no individual, or collective instance, can be favoured over others (Dardot and Laval, 2017).

Certainly we are in front of an ambitious political agenda. But, if we confront the high level of advancement from neoliberal markets, frequently supported by local governments, over the natural resources, as the process of commodification of water, we will realize that it is time for more citizen engagement. At the same time, we have been watching an accelerated shrinkage of the democratic conditions, which is related to the limits of political representation and participation, exacerbated by pressing global climate change. In this context, the debate over the commons emerge as an alternative, in a desert of political perspectives (progressive or conservative), as it pursues political and economic answers to the challenges that arise in empiric life, rather than trying to conform reality to insufficient traditional structures. To deal with neoliberal rule over the state and the market, these movements rescue culture and collective values, horizontal and democratic practices among citizens, and create new form of institutionalization, more representative of citizens' needs.

Water Governance

An analysis of different issues related to the sustainable management of water resources is linked to the need of strengthening water governance. We are referring to complex socio-ecological and socio-environmental systems that often involve interactions between natural elements and human action in a nonlinear and adaptive way (Folke, 2006).

It is a fact that climatic change, has become due to increasing human-induced variables, and is significantly influencing the hydrological cycle, air mass movements, ocean currents, and regional distribution of water resources, with serious socioeconomic

effects and land use. This is requiring new approaches to create the necessary resilience to adapt and cope (Unesco, 2018).

These developments expose the weakness of the existing logic of water governance and management systems (Pahl-Wostl, 2007a; Palmer et al., 2008; WWAP, 2009) within an approach of water security. It is widely recognized: many countries face a governance crisis rather than a water crisis (WWF, 2003).

Water security as the capacity of a population to safeguard sustainable access to adequate quantities of acceptable quality water for sustaining livelihoods, human well-being, and socio-economic development, is increasingly affected by water-borne pollution and water-related disasters, and this implies in a challenge to reduce the impacts on ecosystems.

The most persistent challenges today are related to failures of water governance, and as Pahl Wostl et al. (2012) and Molle (2008) present a critical perspective approach that although very attractive and consensual the concepts may obscure the political nature of natural resources management and are easily hijacked by groups seeking to legitimize their own agendas (Wester and Warner, 2002). For Molle (2008) the definition he uses as “Nirvana concept” emphasizes the three desired "E"s (Efficiency, Equity and Environmental sustainability) but implies that they can be achieved concomitantly if - as the word 'maximize' suggests - problem-solving can be informed by neutral and rational approaches, good science and expert knowledge that reflect these three dimensions, rather than being informed by one of them only. The use of idealized design principles based on institutional and technological panaceas have been applied without long-term monitoring of their performance and effectiveness and without a critical reflection (Meinzen-Dick, 2007; Ingram, 2007; Gleick, 2003). The main idea was to generalize and ignore the specificities, emphasizing the paradigm of how things should be done (Pahl-Wostl et al., 2011a,b). The introduction of Integrated Water Resources Management (IWRM) faced complexity, but was not able to cope with the issues of increasing inequality and unequal access and has been gradually replaced by the concept of water security (Molle, 2008; Bakker, 2012).

The concept of ‘governance’ came up in the 1990s to describe how things are co-managed at different scales (from the global to the individual scale), moving beyond the traditional focus on public administration.

Critical analysis can open agendas up, analyze the logics of control and different social arrangements, evaluate the reaches and limits and propose alternatives when possible.

The possibility of introducing a critical perspective of the understanding of water governance is very relevant, as it has been publicized and applied in many cases as a neutral policy tool. And as Castro (2007) stresses idealized and instrumental approaches to water governance tend to neglect in their analysis, the existence of fundamental social divisions underpinning water insecurity, injustice, and inequality, which are major drivers of water conflict. This implies in addressing water conflicts and social exclusion as a relevant aspects within the scenarios of water governance approach.

There is a strong potential conflict between the ecosystem's needs for water and human needs. Conflicts over water are often affected by problems in the economic and political spheres. The idea of water and food as basic human rights has been increasingly consolidated as concept worldwide

But when water available is not sufficient to satisfy the needs under these two hegemonic concepts, the prevailing idea is that this is liable to lead to conflicts. A newly emerging view sees it as leading to cooperation (Gooch et al., 2004).

The fact is that water demands are rising sharply. Pollution is global and pollutants are more deadly. Interference with ecosystems is both far-reaching and pervasive. All societies are closely interlinked so that any regional catastrophe can have global repercussions. There are increasing global social and environmental concerns. The increased speed of transformation gives people less time to adapt to new situations.

There is a requirement of urgent efforts to increase inter-disciplinary coordination between the techno- and the social sciences, around the uncertainties and conflicts emerging around the management of water and water services. The fact is that environmental threats and hazards among which water-related extreme events and human deficiencies in the management of water are having a central place (McGranahan et. al., 2001).

Over the last few decades international security experts have warned that water was becoming a potential source of conflicts around the world (Gleick, 1993, 2000, 2008). It is also pointed out that the fact that global freshwater sources are unevenly and irregularly distributed, may become a source of conflicts.

Water Governance analysis then involves a baseline analysis of available land and water resources and the social-political institutions involved in governing them. The private sector and, more recently, civil society are recognized as taking (in fact always having taken) roles and responsibilities in resource management, the arrangement and result of those public, private and civil responsibilities is governance.

The countervailing perspectives group itself around the fact that some traditions understand that water governance must be structured around the principles that water is a common good and that essential water services are a public good that cannot be governed through the market. Other traditions defend the entirely opposed view that water must be considered as an economic resource, essential water services as a private good, and that in consequence the governance of water and water services must be centered on market principles.

At the global scale, the long-standing recognition of the urgent need for action has prompted renewed commitments from the international community, which include the SDGs –Sustainable Millennium Development Goals adopted by the United Nations (UN, 2015). However, despite these laudable formal commitments there is an increasing recognition that achieving the UN water goals may not be possible unless radical decisions are taken, both in developed and developing countries. In order to achieve the objectives of the international community in relation to water the need for “sound” and “effective water governance”.

However, there exist different definitions of governance. For instance, the global actors linked to the multinational private water companies have provided a technical definition of governance based on the premises of GWP(2003).

Integrated management tries to gather all these sectors into a unified framework, in which every domain has a specific importance, depending on the priorities in that river basin. These cannot be solved within the established management paradigm based on traditional command and control approach. In this paradigm, regulatory authorities implement technical solutions to narrowly defined environmental problems. Presently there is a growing awareness of the need for integrated approaches that simultaneously take a whole range of trade-offs into account and that involve stakeholders in the whole management process (Huitemma et. Al, 2009).

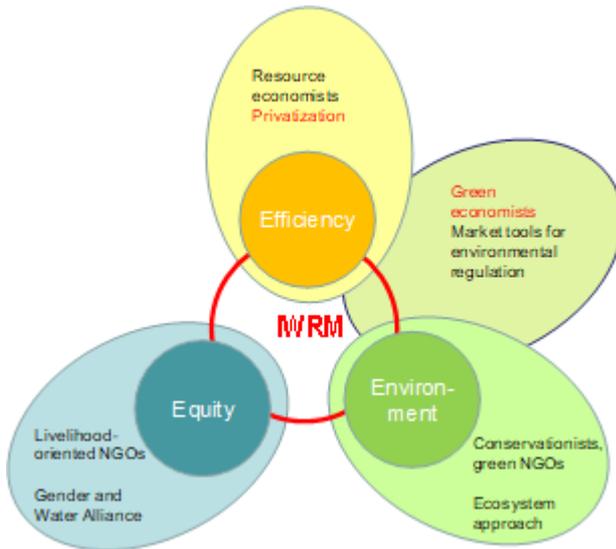
Several shifts in focus have taken place over the past decades, such as the transformation of water management from flood defense to water level control and, after

that, from sectoral water management aimed at the control of users functions to integrated water management and innovative water legislation aimed at the water governance reform (Wester, 2008; Pahl-Wostl et al., 2011a,b ; Molle and Wester, 2007).

EU's Water Framework Directive (WFD) distinguishes between three levels of participation, with an increasing degree of control over the outcomes of the process: 'information', 'consultation', and 'active involvement'. The guidance calls for a 'learning' approach, in which the involved actors get insight into each other's perspectives, views and knowledge, thereby providing the basis for exploring the best way to implement the Water Framework Directives. In order to create opportunities for learning, an active dialogue between the different involved parties is required (Gooch and Huitema, 2004).

The IWRM premises have been appropriated by all players or actors without distinction. Yet, each category of player emphasizes one of the tenets of IWRM that most reflects its own inclination, ideology or interest. The figure below (Molle, 2007) is very explicit. The supporters of privatization or those who see the maximization of aggregate welfare as a priority objective will promote the "efficiency" pillar of IWRM and its view of water as an economic resource. Livelihood-oriented NGOs or social activists will use the concept as a means to further equity concerns and social agendas. While questioning that participation is used as a big umbrella and that the conventional integrated river basin management approach "ends up as a coordinating platform for technocratic representations" other NGOs still support river basin organizations (RBOs) as a valid concept as long as they are a vehicle for bottom-up planning (NGO Forum, 2005). Conservationists or green NGOs have used IWRM to promote conservation of nature or environmentalism in general.

Consulting firms, bureaucracies and development banks adapt their discourse and repackage their policies and approaches. IWRM is used to give legitimacy to conventional developmental approaches. It is to be observed that the use of the IWRM rhetoric as a depoliticizing act is therefore profoundly political in itself, as it does not critically question - but, rather, reinforces - the traditional role, mandate and worldview of the main actors in water resources management, favouring the status quo and business-as-usual strategies (Molle, 2008).



Source: Molle (2008)

A governance approach is wider and expresses a shift towards a notion of polycentric political systems – which implies that many centers of decision making which are formally independent of each other (Ostrom, 2001, 2010a,b)

These polycentric governance systems have been defined as complex, modular systems where differently sized governance units with different purposes, organizations and spatial locations interact to form together systems at different levels. Multi-level governance in these polycentric systems implies that decision making authority is distributed in a nested hierarchy and does not reside at one single level, neither top (Pahl-Wostl, 2012). And this implies these polycentric systems are assumed to have a higher ability to adapt to changing environments and be less affected by climatic changes or failure in parts of the system (Pahl-Wostl, 1995, 2007a,b). Polycentric systems combine decentralization and a distribution of power and authority across levels, and bottom-up and top-down processes are balanced (Pahl-Wostl, 2009).

A aspect to consider is the relevance of knowledge and information, and transparency as increasing uncertainty and complexity (Berkes et al., 2003; Pahl-Wostl, 2007b ; Empinotti et al, 2016) demand a full assessment of a resource governance problem and for finding innovative solutions (e.g. Berkes and Folke, 2002), emphasizing the institutionalization of practices for dealing with uncertainties (Pahl-Wostl, 2007a,b) thus implying in climate change adaptation policies.

For Pahl Wostl et al. (2012) the approach of polycentricity enlarges capacity of adaptation, confronting narrowly prescribed recipes (Pahl-Wostl, 2009; Ostrom,

2010a,b). And this creates possibilities of responding at different spatial scales as well as dealing with heterogeneity in impacts and capacities among different places or basins and subbasins, thus enabling place-specific responses to heterogeneity and uncertainties (Pahl-Wostl et.al, 2012), notwithstanding . And as Pahl Wostl, 2009) emphasizes to make the concept more useful there is a need to identify the nature of the distribution of power and of cooperation structures, and the interplay between different governance modes – markets, networks and bureaucratic hierarchies.

Case Studies

The cases of the two basins we analyze in São Paulo State (from 2013 to 2018) – Piracicaba, Capivari and Jundiaí rivers (PCJ) and Paraíba do Sul, are examples of how the commons approach can be a component of public policies. Water governance requires inclusion, accountability, participation, transparency, predictability and response capacity to advance towards an agenda that incorporates a commons view of water, due to its emphasis on human rights. The challenge of a policy based on the commons is to strengthen an ethic of co-responsibility, reduce wasteful behavior and promote cooperative initiatives.

There is nowadays a permanent challenge, not only in Brazil, to reduce the possibilities of water crisis, which requires new logics of governance, based not only on economic performance, but on a multiplicity of principles to promote water democracy. It is thus necessary to strengthen decentralized, community-based, democratic water management, where water conservation includes political, socio-economic and cultural dimensions, rather than mere macroeconomics.

Case Piracicaba-Capivari-Jundiaí Basin

The Piracicaba-Capivari-Jundiaí (PCJ) basins have seventy-six cities totally or partially located in its area. The area is formed by 15.303,67 km², with 92,45% of its territory located in the State of São Paulo (SP) and the other 7,55% at the State of Minas Gerais (MG), both at the Brazil's Southeast Region (PCJ Rivers Basin Committee, 2010). There are approximately 5,7 million people at the PCJ basins areas, with Campinas as its largest city, containing approximately 1,1 million people (SEADE, 2019; IBGE, 2018).

Besides being a high population region, the use and occupation of soil in this area is characterized by having most portions of its shares as green areas. This share represents

67% of the area and is composed by: pasture, native field, forest and sugar cane production. (PCJ Rivers Basin Committee, 2018).

The level of sewage collection and treatment in the basins is significantly positive, having more than 90% of sewage collection, with more than 75% of this volume treated. However, in the period of 2013 to 2017, there were no further advance greater than 1,2% in the collection improvement and 11,1% in the treatment of this sewage (PCJ Rivers Basin Committee and PCJ's Basin Agency, 2018). The report points that the cities with the lowest rates of collection are located at the region where are the sources of the basins. Eight of these cities have no sewage treatment at all.

Currently, the PCJ committees adopt for the hydrographic characterization, the definition consolidated in the Situation Report of 2002-2003, in which territorial boundaries were left and it was adopted the concept of hydrographic boundaries. It was taking into account the area of contribution of the water bodies and not only their location within the territory. Thus the municipalities that were not part of the delimitation established by the Water resources Management Unit were added to the Basin 5 (UGRH 05) (PCJ Rivers Basin Committee, 2010).

As a consequence, the dominance of the water bodies was derived from the definition found in the Constituição Federal de 1988 (Federal Constitution of 1988), so that those rivers that are located in two states (SP and MG), are assets of the Union, being issued in 2005 by the Agência Nacional das Águas (National Water Agency) a technical note (No. 018/2005 / NGI) to define the dominance of the water bodies of the PCJ basins (PCJ Rivers Basin Committee, 2010). Currently, there are 7 sub-basins, as shown in figure x.

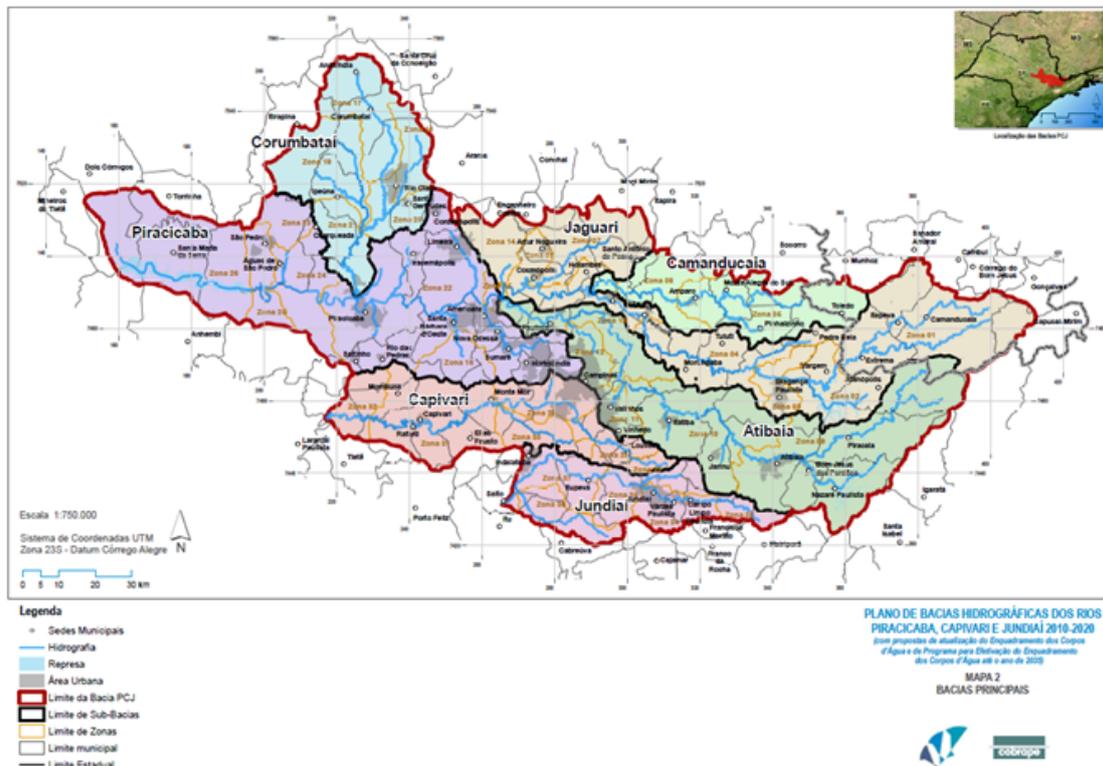


Figure x. Piracicaba-Capivari-Jundiá river basin.
Source: PCJ Rivers Basin Committee, 2010.

Within this dominance configuration, the PCJ watersheds are part of a structure divided into three committees, one from the State of São Paulo, one from Minas Gerais and a Federal one. The shape of these committees aims at decentralized and participatory management, seeking the best decisions for the basins involved, through deliberative and consultative processes, with representatives of civil society, water users and public authorities (federal, state and municipal). Thereunto, they have the assistance of the Agência de Bacias (Basin Agency), which is responsible for managing the financial resources collected from the collection for the use of water resources.

With regard to the composition of the committees, there are currently 95 members, being part of 70 of the 76 cities of the PCJ basins, distributed among the three committees (Figure xx).

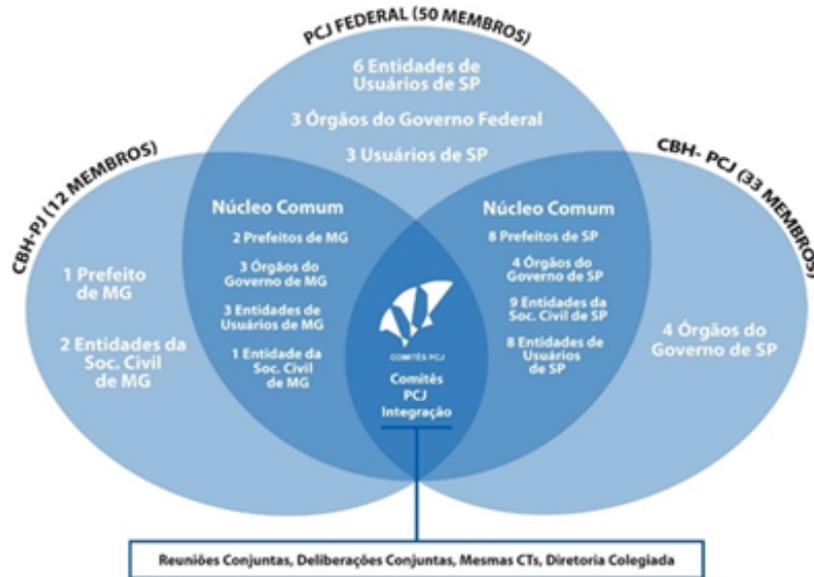


Figure xx. Organization of the PCJ Committees.
Source: PCJ's Basin Agency, 2019.

Each committee structures twelve Technical Planning Chambers, with the purpose of getting a better share of activities and to improve civil society's representation, with the decision-making process done by Committees Plenary (PCJ's Basin Agency, 2018).

In view of the importance of water resources of the PCJ basins, in relation to the Sao Paulo Macrometropolis (SPMM), mainly the Metropolitan Region of São Paulo (MRSP), the PCJ committees started to looking for alternatives to minimize and prevent impacts of water crises, based on the experience of 2014/2015.

An issue that happened in the concession of the Cantareira system to SABESP and was affected by the drought of 2014/2015, was a resource dispute at the time and the renewal of the concession was postponed twice. After the last renovation, occurring in 2017, with a ten years' contract (Joint Resolution ANA/DAEE n° 926, 2017), there was an increase in preserved water in the PCJ basins, from 5m³/s to 10m³/s during dry season (PCJ Rivers Basin Committee and PCJ's Basin Agency, 2018).

In the last Situation Report 2018 (based on data of 2017), the critical level of water was presented - from 2013 to 2017 - as always less than 1,500 m³/per inhabitant, by each year. It has showed a significant reduction of approximately 10m³/year (PCJ Rivers Basin Committee and PCJ's Basin Agency, 2018).

Regarding the use of this water, there was a small increase in the demands for public supply, industrial use and rural use, between the period of 2013-2017. The PCJ basins was the ones responsible for the supply of both 5,7 million of PCJ's area own

residents and of 9 million RMSP's residents (PCJ Rivers Basin Committee and PCJ's Basin Agency, 2018).

Another change driven by the 2014/2015 crisis was the adhesion, in 2015, to The Paris Agreement. The movement was made with the purpose of evaluate the current situation and to find adaptative measures that would support the water resources' management in a climate changing scenario (PCJ's Basin Agency, 2018). Still according to the Report, there is no current analysis focused on the risks arising from the climate change, just its adhesion to the existing instruments as, for example, in the PCJ Basins Plan.

Case Paraíba do Sul Basin

The Paraíba do Sul River Basin (Figure XX) includes 184 municipalities, in three states of Brazil: 39 municipalities in the State of Sao Paulo, 57 municipalities in the State of Rio de Janeiro, and 88 municipalities in the State of Minas Gerais (CEIVAP, 2019). This basin is located between the Metropolitan Region of Sao Paulo and the Metropolitan Region of Rio de Janeiro (ANA, 2019), and connects the two most important metropolitan regions of Brazil.

This basin supply water through a complex system of reservoirs and transpositions, being responsible for about 80% of the water supply of Metropolitan Region of Rio de Janeiro (ANA, 2015). The main uses of water in the Paraíba do Sul river basin are water supply (14.2 million people supplied), irrigation, hydropower generation and dilution of sewage, and this last activity is one of the main sources of pollution in the basin (ANA, 2019).

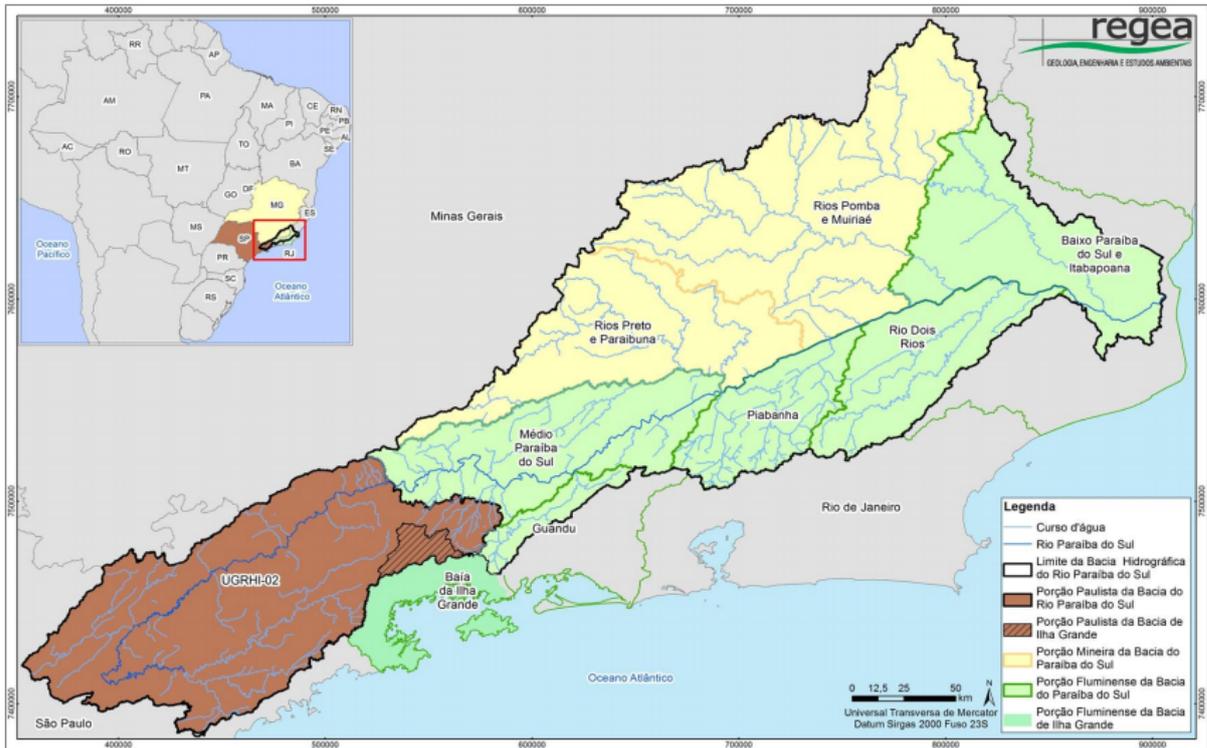


Figure xx - Paraíba do Sul river basin.
Source: REGEA, 2016.

The study case was delimited for the Paraíba do Sul basin extension that is part of territory of the SPMM, known as the Paraíba do Sul Basin - Management Unit for Water Resources 02 (UGHRI-02) (FIGURE XY). The UGHRI-02 includes 34 municipalities, an area of 14.491,17 km² (REGEA, 2016) and more than 2,16 million inhabitants (SEADE, 2019).

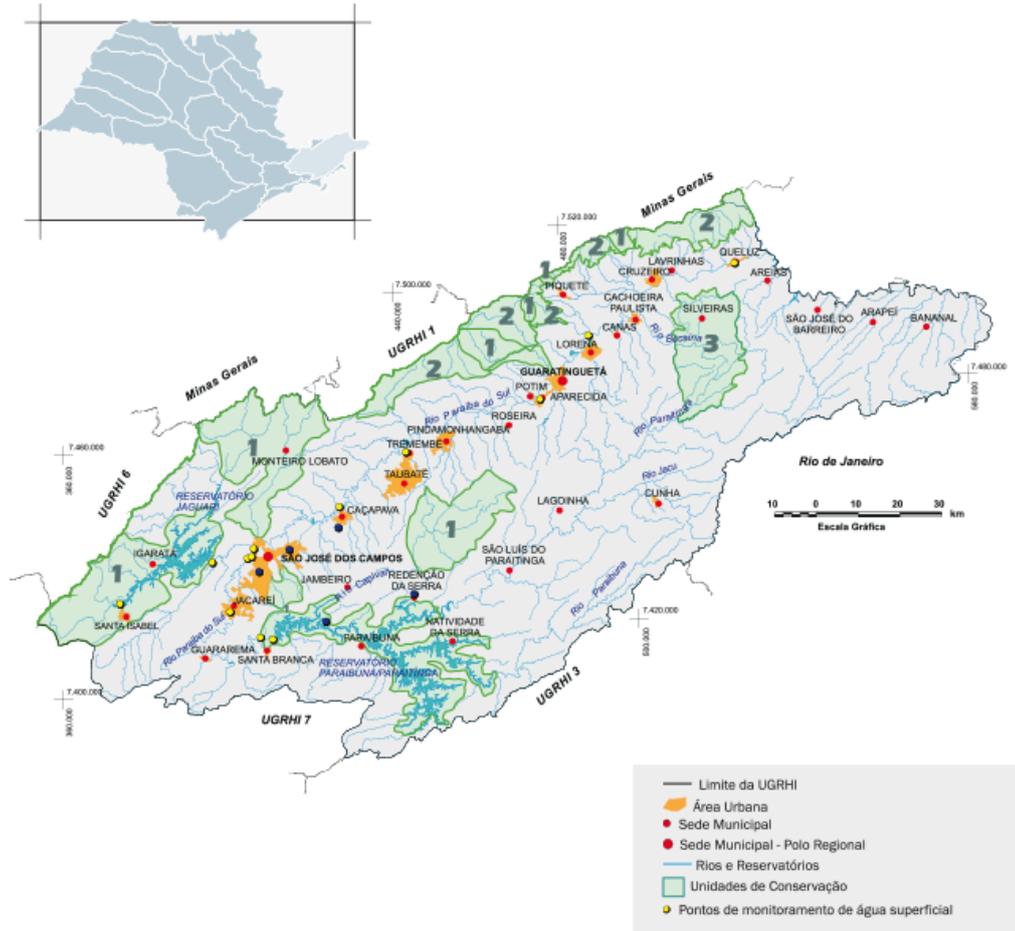


Figure XY - Paraíba do Sul Basin - Management Unit for Water Resources 02 (UGHRI-02).
Source: CBH-PS, 2019.

The Paraíba do Sul River Basin Committee (CBH-PS), is a consultative and deliberative agency of the Integrated System for Water Resources Management (SIGRH), acting in the basin of the Paraíba do Sul River in the State of São Paulo (REGEA, 2016), and is composed by representatives of the civil society, the state and municipal agencies(CBH-PS, 2019).

The committee also have six technical advisory boards, each of them with their own functions: Institutional Affairs (CT-AI), Environmental Education and Social Mobilization (CT-EAMS), Water Charging Studies (CT-ECA), Planning (CT-PL), Sanitation (CT-SAN) and Forest Restoration (CT-REF) (CBH-PS, 2019).

The Paraíba do Sul basin connects various uses of water in three different states of Brazil through a complex system of reservoirs and transpositions. These transpositions are possible by engineering solutions that allows the capture of water to take place at ever greater distances and, once they are realized, express joints between previously isolated and non-interconnected basins (Rio, 2017).

As a result of one of the most severe droughts in the history of the SPMM that occurred in 2014-2015, one of the solutions from the Government of State of Sao Paulo to increase the water supply for the Metropolitan Region of São Paulo was an additional water transposition, interconnecting the Paraíba do Sul basin (UGHRI-02) and PCJ (UGHRI-05) (SABESP, 2019). This transposition gives new outlines to the conflict scenarios for water use, vulnerability and complexity in water management in the Paraíba do Sul river basin (Giatti et al., 2016).

Water governance is highly complex, in this sense the debate about how to manage water has been influenced by the uncertainties and risks associated with the environmental crisis, in which the occurrence of extreme events associated with water plays an important role. It is also to be considered that inequalities play a strong role as to the potential emergence on water conflicts, related to unequal access to water sources be it at urban and periurban level and in the rural areas due to the predatory logic of water appropriation by large landowners affecting directly small rural producers.

When analyzing the challenges to promote a commons approach to water governance in the context of Macrometropolitan São Paulo, a region that can be considered as strongly affected by scarcity, we propose a discussion that aggregates several theoretical issues and debates.

We recall that idealized and instrumental approaches to water governance (Molle, 2008) tend to neglect in their analysis, the existence of fundamental social divisions underpinning water insecurity, injustice, and inequality, which are major drivers of water conflict (Castro 2007). This implies in addressing water conflicts and social exclusion as a relevant aspects within the scenarios of water governance approach.

The example of the water crises also brings up the fact that societies' lack of knowledge about the water management process, the technical and political characteristics of the management, as well as, how the decisions taken within the scope of the Government of the State of São Paulo are relevant aspects to consider.

It is to be considered that water scarcity and extended droughts with effects on the systems of water supply are increasingly frequent in Brazil and other parts of the world and this implies in the need of new approaches to water governance.

During the crisis between 2013-2015, the lack of information of the population and a position of little transparency on the part of water managers in the State of São

Paulo, missed an opportunity for a wide debate, although proposed by organized collectives.

These collectives act to build a proposal for alternative water management that has been implemented by the government of the State of São Paulo (Jacobi, Cibim, Souza, 2016). They pointed out that although managers treat In the metropolitan region of São Paulo, there is a situation of water scarcity, which requires the expansion of the channels of participation of the society that were left out of the decision-making process during the crisis. The consequence of the managers' strategy was a process without transparency, penalization of the most deprived populations that had in the periphery of the city of São Paulo successive interruptions of the water service.

The peripheral populations were the most affected with interruption of water supply, while in the richest regions there was no lack of water. as the interruption of the water distribution service occurred without dialogue with the population, causing numerous supply problems (Jacobi, Souza & Bujak, 2018).

The focus given by public officials for this situation ignored the collaborative and integrated management of urban water sources and participatory governance, prioritizing emergency works to interconnect the supply systems and disregarding social and environmental issues, in particular the environmental licensing process (Jacobi; Cibim; Souza Leão, 2015).

In this context, preventive and adaptive management should have been done once it was diagnosed the hydric vulnerability of the region.

Therefore, there was a political incoherence in the process because there was lack of transparency in the communication of the measures regarding the crisis for the population as well as centralization in decision-making. One must also consider the inertia of democratic structures, such as organs of the Water Resources Management System, in particular the lack of action of Watershed Committees (Jacobi, Cibim, Souza Leão, 2015).

Noting the critical situation that the region was in 2015, civil society decided to organize and mobilize, not only to show that it was aware of the lack of management, but that it had detected the lack of governance and, in this scenario, found that there was room to act (Jacobi, Souza and Bujak, 2018).

Established in October 2014, the Alliance for Water, a network of more than 50 institutions, groups and individuals acting for policy coordination, production and sharing of knowledge to inform the population and strengthen individual and institutional changes

towards a new water culture. The various non-governmental organizations developed activities, actions, initiatives and projects to inform the population, focusing the actions of public officials and working cohesively for a water governance with a focus on the new culture of care for water and adaptiveness (Aliança pela Água, 2015).

And how to link the issue of commons within the analysis of the water crisis. Common implies in multi-level cooperation which promotes several aspects emphasized as the potential to self-organize, chose leaders, craft rules, norms, and generate incentives and boosts collective action (Ostrom et al, 1994).

Ostrom's main point was to demonstrate that a set of rules could be a drive to individuals to overcome opportunistic behavior and to adopt cooperative conduct. But as Dardot and Laval (2017) point out her approach becomes a mere qualifier to be applied to the resources which are already "common" by nature.

The fact is that the water crisis in Macrometropolitan São Paulo indicates the need to focus on collective principles of organization, that can contribute to design governance mechanisms connected to social and political struggles and practices, that emerged as a response to increasing social inequality and destruction of natural environments. And the understanding of commons has been recognized as one of the defining principles of alternative political movements (Dardot and Laval, 2017). The mobilizations during the crisis, although not capable of engaging significant number of citizens indicated a new operative concept of practice towards new forms of democratic governance.

It promoted a practical activity of commoning, of defining what will be shared in common and what rules will govern the commons' citizen-subjects (Dardot and Laval, 2017).

The crisis signaled the considerable the asymmetries of power and information of the different actors involved in the existing participatory process of water management through the water basin committees to advance to their adaptiveness.

One can understand governance as a process involving decision-makers and not decision makers with a common goal: the problem to be faced, where decentralized and co-responsible participation is the keynote of the process (Pahl-Wostl et al., 2012).

Participation should function as a principle and permeate the whole process since governance experiences need to interact with other sectors and groups outside those directly involved, to involve them in the search and construction practices that can lead to better management results.

The creation of conditions for a new proposal for dialogue and engagement based on shared-responsibility should be increasingly supported by educational processes oriented towards "public deliberation".

This will be achieved mainly by the growing presence of a plurality of actors that through the activation of their potential participation will increasingly be able to work consistently and without protectorship in the decision making of public interest. In this way, legitimizing and consolidating proposals for management based on guaranteeing access to information and the consolidation of open channels for participation that, in turn, are basic preconditions for the institutionalization of social control (Jacobi, 2012).

The expansion of these types of social practices can strengthen shared-responsibility and mobilization of actors, develop and implement alternative solutions, besides being a new form of participation - more inclusive and plural - around one the common good, as it is water, and reducing unequal access within the same territory.

Participation initiatives should contribute to the improvement in the water governance processes, stimulating cooperation and collaboration between different sectors such as the technical-scientific agreements between academic institutions and civil society organizations and coalitions of civil society, among others practices.

Ongoing initiatives that seek to increase dialogue about the hydric crisis, the vulnerability and the uncertainties inherent to the unsustainable model of society we are building bring to the discussion two points worth mentioning: the possibility of action of society through organized actions and the fragility of the current governance process (Jacobi, Souza & Bujak, 2018).

One of the weaknesses is the lack of transparency in the presentation of information. In this sense, one of the challenges faced in terms of governance is associated with the need to strengthen the mechanisms of social control.

It is observed that despite advances the National Policy foregrounds the importance of technical and scientific body and the knowledge produced by it in the power relations within the decision-making areas of the basin, which limits community involvement in activities the Hydrographic Basin Committees. So, in fact, it keeps the decision-making power between those who hold technical-scientific knowledge. The difficulties arising from these asymmetries are centered mainly on the lack of collective practices to facilitate interdisciplinary and intersectoral activities to strengthen shared visions for the management of basins in a sustainability perspective.

For the success of water governance processes are necessary conditions for good governance of water, such as inclusion, accountability, participation, transparency, predictability and responsiveness.

Conclusions

The emergence of new governance practices and the inclusion of stakeholders in new trading spaces promotes the possibility of access to information not only become a key instrument but also to grow in importance as a factor of power and influence over the decision-making. Transparency is an essential component to promote equity and fairness in decision-making, based on a process that adequately inform the public and stimulate social control. This can be understood as civil participation in management: surveillance, monitoring and control of the public administration actions.

However, there are factors that limit and hinder the exercise of social control over the state's administrative function, namely: a) the political patronage; b) the difficulties to access public information; c) and the lack of an engagement culture and supervision.

A major challenge in water governance is to ensure an open and transparent approach; inclusive and communicative; coherent and integrative; equitable and ethical. It is understood that a new model for environmental governance should go through redesign of government institutions of environment and, simultaneously, include social and environmental sustainability policies. The cultural transformation required to break the gap between the recognition of the social and environmental crisis and the actual construction of practices able to structure the foundation of a sustainable society.

Acknowledgments

This work was carried out with the aid of a grant from the Inter-American Institute for Global Change Research (IAI) SGP-HW 056 and from The São Paulo Research Foundation (FAPESP - Process: 15/03804-9), which funds the Macroamb research group.

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