International Water Resources and the advances in river basins governance structures in South America: the cases of Acre and Apa Rivers

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Abstract

This article discusses the advances in governance structures of shared river basins in South America, focusing in two cases: Acre River Basin, located in the drainage area of Amazon River Basin, and the case of the Apa River Basin, located in the drainage area of the La Plata River Basin. It is intended to explore cooperation processes for water resources governance considering differences and proximities among the domestic politics of the involved countries in order to verify if these differences and proximities lead to the possibility of cooperative interaction patterns. It is assumed that the territorial contiguity of river basins and past cooperation experiences facilitate the creation of new institutional frameworks. Nevertheless, the improvements are not followed by shared governance as predicted by literature; in fact, it leads to a type of coordinated governance which is self-determined “integrated” due to the fact that countries coordinate themselves to provide capacity of action.

1 This article is a product of a research carried with funding from the Research Support Foundation of the State of Minas Gerais – FAPEMIG.
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while they maintain their specific domestic policies, without advancing in the creation of specific policies for transboundary water resources governance.

**Keywords** – international cooperation; transboundary river basins; shared water resources governance
Introduction – Guidelines for water resources management

Since the middle of the past century, guidelines are been created to tackle the problem of water resources management. This is an entire world’s concern and originates management policies and structures guided by similar goals. Nowadays, there is a widen consensus referring to a set of guidelines that would be adequate for water resources management. They were elaborated in a variety of international forums, since the United Nations Water Conference (Mar del Plata, 1977)\(^7\).

In general lines, international guidelines converge to the following aspects:

a) water resources are strategic resources. They are essential for the promotion of social and economic development, and their preservation is one of the human security aspects, analyzed from a wider perspective; b) concerns towards water resources are closely related to environmental preservation that is essential to guarantee the survival of human species and ecosystems from which it depends; c) water resources issues are related to poverty reduction issues and tools to enable the implementation of the sustainable development principles; d) water resources security depends on cooperated action among users, public and private sectors, communities and countries, and should be developed in function of the survival of current and future generations; e) water resources management should be integrated to other environmental dimensions, should be participative and should institutionalize procedures that favor negotiation in conflict situations; f) in order to permit this integration, the management should be made under a river basin basis and should not be restricted to the boundary limits between countries, regions inside a country or between cities inside regions; g) direct enrollment of communities and women is essential for water resources preservation and should be promoted guiding their participation in resources management and in environmental education activities. (SOUZA, 2003, p. 73-4)

It is considered that these global guidelines for water resources management are useful general principles to guide the actions of domestic and international, private, public, state and non-governmental actors in the creation of water resources policies and management structures. Nonetheless, these guidelines do not provide norms, rules and procedures that can be broadly and globally adopted and there are no international general treaties or protocols that institutionally establish the interaction patterns that actors should have in this issue area\(^8\).

Nonetheless, this does not imply the inexistence of regional coordinated actions among interested actors. In Latin America, for instance, based in the two largest international

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\(^8\) Certainly, the inexistence of an international regime does not hamper the structuration of regional regimes.
river basins in the region, there were identified 65 bilateral or multilateral treaties among the countries sharing the La Plata River Basin and 18 bilateral or multilateral treaties among the countries sharing the Amazon River Basin, until 2000. Also, it is registered a set of treaties established among South American countries referred to smaller transboundary river basins as the cases of the two river basins in focus in this study. Consequently, there is a historical path of cooperation along this specific issue.

The existence of international treaties and agreements do not eliminate the need for new approaches for water resources management. According to the United Nations World Water Development Report (2007), water governance aspects are the main challenges to adequate management and shared governance of the resource. In this report, the UN understands that the sharing condition of this resource is the main issue of its governance and that complexity, uncertainty and increasing vulnerability of natural and human systems lead water managers to agree in the alternative that focuses in the inclusive and integrated management of water resources and recognize the need to assure a holistic system of protection.

In order to achieve that, three key dimensions must be considered: (1) propitious environment – it is referred to the political dimension that must establish rules for water use, protection and preservation; the development of water legislation, definition of financing sources and users incentives. (2) Institutional Structure – creation of an organizational structure for policies implementation with the identification of necessary resources, strengthening of institutional capacities and human resources development. (3) Management Tools – provision of administrative and political resources for water management through the elaboration of a water management plan which combines resources’ use, efficient management conditions and development options; organized society awareness, development of mechanisms for conflict resolution and regulatory instruments of use, institutionalization of alternatives for water use charge, and creation of an integrated information system to support the process of decision making.

It is still a challenge for some Latin American countries to follow international principles or overcome local problems in order to incorporate international recommendations. In general, until the 1990s, the adopted management systems were very heterogeneous and according to CEPAL (1998) they could be grouped in three different types: (1) administrative

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9 This information is available at: http://www.transboundarywaters.orst.edu/database.

systems that incorporate institutions related to water management, with central coordination, smaller presence of the State, participation of the private sector and attribution of a more important role to the economic incentives as a management tool. (2) Administrative systems that have a central coordinating mechanism of policies but characterized by its high level of institutional decentralization of the responsibilities related to the resources’ use, with a slightly greater presence of the state. (3) Administrative systems characterized by a significant authority centralization and a limited or null delegation of responsibility in which is verified strong state’s presence.

It is admitted that challenges in the implementation of water management international guidelines are related to the public management model domestically adopted\textsuperscript{11}. CEPAL recognizes that one of the main problems which during a long period of time had affected the institutional innovation on water resources management in Latin America was the prevalence of a sectoral perspective of water management. This problem was connected to a perspective of a public policy more centralized in the state’s apparatus with a strong executive power presence that ended up imposing challenges to the production of a more specific water policy and, consequently, do not present an institutional structure strictly turned to this goal. This situation has been significantly altered and part of these changes, in some countries of the region, will be shown in this work.

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<th>Historical precedents: regional context of water management</th>
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<td><strong>Sectoral Perspective</strong></td>
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<td><strong>Assumptions</strong></td>
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<td><strong>Consequences</strong></td>
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<td><strong>Innovation Challenges</strong></td>
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Table 1 – Water Management Historical Precedents
Source: own creation, based on Jouravlev, 2001

This work is part of a broaden research about the institutional advances in transboundary river basins management in South America and focuses in two specific cases: the experience in the creation of management structures that propitiate action coordination among the water riparian countries of Acre and Apa rivers. It is intended to identify advances on the creation of cooperative patterns of interaction for the convergence of actions designed

\textsuperscript{11} Other sphere is related to the problems of competing water uses that defines the process of specific policies creation. These competing uses are, in general, electric energy generation, irrigation, consume for industrial production in all industrial sectors, fishing, navigation, domestic consume, public consume, watering animals.
to improve water management and discuss the challenges found by Brazil and Paraguay in reference to Apa river water management and by Brazil, Bolivia and Peru in Acre river water management.

Furthermore, the article briefly presents the analytical model used in the case studies, then, a systematization of the water policy of Brazil, Bolivia, Paraguay and Peru in order to discuss afterwards the interaction processes considering the creation of governance mechanisms in both river basins. The chosen methodology was based on documental analysis made through official documents.

**Elements for an analysis model**

Concerning how actors solve collective action problems, Ostrom (1999) suggests that geophysical interdependence is a fact and it is independent of institutional frameworks, but this framework is able to alter the interaction dynamics among actors in a relation of interdependence. Thus, the challenge is to establish coordinated strategies in order to improve general benefits and reduce collective damages. The authoress considers there will be greater acquiescence in relation to rules compliance if they are formulated by the actors themselves. In the theoretical area of International Relations the cooperation problem may be summarized in two issues: (1) what circumstances favors cooperation in an anarchic context? (2) What are the available strategies to States in order to promote cooperation, through the transformation of eventually adverse circumstances? (OYE, 1986, p.2).

Keohane and Ostrom (1995) believe that at the domestic and international level, actors involved in collective or public goods governance are able to establish agreements and create new institutional restrictions which alter the basic structure of their incentives. Hence, it can be assumed that basic rules used as guidelines for the solution of problems of Common Pool Resources (CPR) local sharing can be adequate as a solution for problems of cooperation among international or transboundary CPRs users. The authoresses observe two variables to discuss the possibility of this application: the number of actors and its heterogeneity.

Referring to the number of actors, the issue is related to cooperation problems in large and small groups vis-a-vis the rationality of actors closed to Olson’s debate (1971) when he considers the group’s size an explanatory variable of actors’ behavior. According to Snidal (1995), the number of actors alters the problem nature and the leadership role can make a difference. However, Keohane and Ostrom (1995) consider the group size might not be quite relevant and other variables are able to better explain cooperation problems: actor’s
perception of their common interests, low costs in the creation of institutions and low transnational costs.

Referring to actors’ heterogeneity, it is assumed this is more frequent in situations when sharing goods of common use, and this is visible in the case of water resources that are shared by different actors, to different goals and constantly competing among themselves. In this case, the number of actors involves more than the state actors, users of the resource such as, for instance, irrigators are very relevant actors in decision making due to the fact they may impact rules that will guide the access, exploitation and usage of the resources.

It is believed, in general, that actors’ heterogeneity inhibits cooperation. However, some theorists make some reservations to this hypothesis. It is necessary to consider three heterogeneity aspects: one referred to capacities, another referred to preferences and a third one referred to information and beliefs. Considering these aspects it is assumed that heterogeneity imposes a challenge to cooperation at a local level due to the fact it relates to information, capacities, preferences and beliefs differences – great heterogeneity potentiate conditions for conflict eruption; at an international level, heterogeneity would facilitate cooperation once it would express interdependence, and differences in capacity could imply in profit exchanges. Furthermore, it should be considered that capacities concentration in a small number of actors might increase the chances of a successful cooperation due to either the hypothesis of a relevant elite or the intensity of minorities’ preferences.

Therefore, the research intended to discuss the circumstances that create conditions for cooperation among the riparian countries of these resources and the strategies they use to promote cooperation considering that the water management domestic policies of the countries mentioned in this study are inspired in common principles, internationally accepted as adequate.

Through the available database, the research team has advanced towards the discussion of a common understanding in literature that countries share management structures in these cases. Considering differences and proximities among water management domestic policies adopted by the countries inside their territory, it is verified the cooperative actions through the creation of bilateral or trilateral institutional mechanisms that uphold domestic structures and establish coordination alternatives of punctual actions based on the perspective of an integrated management of this natural resource.
Some relevant aspects of institutional structure for water resources management: Brazil, Bolivia, Paraguay and Peru

The authoresses of this article developed studies and researches which show important differences between the institutional frameworks of water policies in the countries in focus although it is observed that in the last 5 years this framework has significantly been altered. Below, Table 2 systematizes information about water resources policies in Brazil, Bolivia, Paraguay and Peru.
### Advances in administrative structure for integrated water management in a domestic level

<table>
<thead>
<tr>
<th>Country</th>
<th>Description</th>
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<tbody>
<tr>
<td>Brazil</td>
<td>There is a Water Management National System composed of the National Council of Water and River Basins Committees of federal rivers; “states” of Brazil have autonomy to legislate on water in their sphere of competence.</td>
</tr>
<tr>
<td>Bolivia</td>
<td>There is no national system although there is a general water law and national, regional and local water management plans. However, management rules are under responsibility of the local level (Departamentos). This indicates decentralization, but also fragmentation due to the inexistence of national structures for action coordination at the local level (departamentos).</td>
</tr>
<tr>
<td>Paraguay</td>
<td>Sectoral focus without a central management entity. There is a National System for the Environment (SISNAM) and an Office for the Environment working in inspection.</td>
</tr>
<tr>
<td>Peru</td>
<td>There is a water management national system, part of the National Water Authority, ANA, and many related ministries. It is verified the presence of Councils of River Basins. There have already been advances on an integrated and multi-sectoral management focus and the planning units are river basins and aquifers.</td>
</tr>
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### Advances on the creation and operation of water management entities at a river basin level

<table>
<thead>
<tr>
<th>Country</th>
<th>Description</th>
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<tbody>
<tr>
<td>Brazil</td>
<td>It is registered tradition on water management by river basin; current legislation creates River Basin Committees as a management unit with deliberative power, and River Basin Agencies of an executive character. Integrated, multi-sectoral and decentralized management, with participation of public and private sector and civil society.</td>
</tr>
<tr>
<td>Bolivia</td>
<td>It is responsibility of the Ministry of Water the role of water management. The Socio- Technical Council, Inter-ministerial Water Council, Vice-Ministry of Irrigation, Vice-Ministry of River Basins and Water are connected to the Ministry of Water.</td>
</tr>
<tr>
<td>Paraguay</td>
<td>There are no records referring to advances on national basins management. The country participates in shared management of international basins, visibly in the La Plata River. The debate of a new law proposes the adoption of ‘river basin’ as the management planning unit.</td>
</tr>
<tr>
<td>Peru</td>
<td>There are advances on basins management and this has started with modifications on the legislation and management structure, since 2008. The reform created the river basins councils and the administrative department in Hydrographic Units. It is predicted articulation among federal, regional and local levels with the purpose of a decentralized and multi-sectoral management.</td>
</tr>
</tbody>
</table>

Table 2 – Advances on water management in Latin America and Caribbean: regional and compared situation between Brazil, Argentina, Paraguay and Uruguay.  
Source: Own creation, based on Jouravlev, 2001; Miranda, 2009; ANA, 2009
The focus in these countries is related to the fact they have been discussing integrated management alternatives of transboundary water resources. It is already verified a constant dialogue among organisms that manage these resources at a local level and advances have been identified referring to the management of the resources’ use, understood as a shared good, and expressed in the increasing number of treaties and bilateral or trilateral agreements, based on the two cases studied.

Figure 1: Political Map of South America
Source: https://maps.google.com/maps?hl=pt-PT&tab=w1

Brazil has contributed to the innovation of its institutions for water management since the middle of the 1990s. It has also advanced on the observance of international guidelines mentioned in this study. In general lines, the Brazilian federal structure of water management is organized as following: Office of Water and Urban Environment is a subordinate organ of the Ministry for the Environment, which has a Water Department; as a collegiate organ there

is the National Water Council and as a linked entity the National Water Agency, autarky previously designed as part of the management structure and responsible for the implementation and coordination of shared and integrated water management as well as for water access regulation. The National Water Council, deliberative organ, is organized in technical chambers, among them the Transboundary Water Management Technical Chamber – CTGRHT – which has the following attributions:

1. Propose technical, legal and institutional exchange mechanisms among the neighbor countries on water management related issues; 2. Analyze and propose joint actions in order to reduce or find solutions for eventual conflicts; 3. Propose guidelines for transboundary water management (border and cross-border); 4. Discuss problems aiming to develop actions and common solutions searching optimization and human resources and finance allocation; 5. Propose mitigating and compensatory actions; and 6. The regular competences of the CNRH Intern Regime and other that may possibly be assigned by its Plenary.

It is interesting to observe that although Brazil has a quite modern legislation and a decentralized and participative management structure, it still has to strongly advance on this structure implementation. Firstly, it is necessary to assume that regional river’s management is responsibility of river basin committees in regions where governance does not coincide with the cities political-administrative demarcation. In addition to river basins committees there are inter-state river basins committees located in east and northeast region of Brazil, currently eight. In relation to transboundary waters, the complexity of the issue is amplified: there is a need to interact and coordinate actions with the central government of the riparian countries of the resource, with regional and local governments in the domestic level of the involved countries, and in the specific management structure case of Brazil, with river basins committees organized in the drainage area of the referred river basin.

Nevertheless, the implementation process of this management structure is not in the same stage in all regions of Brazil. According to official information a diversity of regional states have not implemented yet the national guidelines for water, mainly those in the bordering section where this process is still slower.

13 This information is available at http://www2.ana.gov.br/Paginas/default.aspx, 05 May 2010.
14 Available at http://www.cnrh.gov.br/sitio
15 According to http://www.cbh.gov.br/#not-interestaduais
16 This information is available at http://www.cbh.gov.br/ForumComites.aspx-sitio
Although federative structure provides autonomy to federation “states” to legislate on “state” water resources, which might largely explain the unequal development on the implementation of water management structures, it is important to observe that among those bordering South America neighbors the state of Amazonas has only a river basin committee (CBH) – the Tarumã river CBH, but in a region near the “state” of Pará, hence far from the border region as shown in Figure 2.  

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17 The brazilian “states” map shows a territory division by river basin considering the hydrographic regions determined by the “state” political authorities for the implementation of river basin committees in accordance to the Federal Law Nº 9433/1997. The national “states” map shows the precarious establishment of the federal policy by some brazilian “states”, mainly the bordering “states”.
There is no CBH in the “state” of Acre and neither in the state of Rondônia\textsuperscript{18}. Furthermore, there are no organized committees in the state of Roraima and neither in the state of Amapá. In the state of Mato Grosso is registered only one organized CBH – CBH of Sapé and Várzea Grande streams, but in the interior region of the state, far from the bordering region.

\textsuperscript{18} There is a Work Group which discusses the Acre river management, this Work Group is linked to CTGRHT, but does not have a committee status. This group actuation will be discussed in this work.
In addition, in Mato Grosso do Sul state, there is only one organized CBH, the river Miranda CBH, but in a region far from the border.

The state of Paraná has five organized committees, including the CBH of III Paraná River, in the bordering region. There are greater advances in the establishment of the water management structure of Santa Catarina that has 16 organized committees, in which the SC15 is located in the bordering region with Argentina. The state of Rio Grande do Sul has 22 organized committees; in this state, all river basins in the bordering region with Argentina or Uruguay have established committees.
As observed, although this region has an advanced national water policy as well as a complex organizational structure connected to it, the bordering regions still have a precarious establishment of this policy referred to management structures.

Bolivia, country also in focus in this article, is organized in a federative democracy in which its territory is divided in departamentos or “states” assigned with certain autonomy in relation to the topic of water management. In fact, management is decentralized in a sense that there is no responsible national organ and the decisions related to water use, preservation and distribution are managed by the departamentos. Thus, it is considered the country lacks a central coordination. In one hand this expresses great decentralization, but in the other hand it may impose a challenge for the establishment of partnerships in transboundary river basins in which were not identified a defined normative guideline.

In relation to water policy structuration, Bolivia has a General Water Law of 1906, in which there are general statements about the importance and necessity of water for survival as well as it states that water resources are public goods managed by the State. It must be observed that a significant part of the document is directed to the explanation of water rights (pluvial or groundwater) in private and public domains.

Until 1990s, existing laws and regulations for water management were punctual dealing generally with the use of water for irrigation and water regulation in private domains. Hence, those are norms for specific uses and this shows large fragmentation of the policy adopted. Nonetheless, in 1992, the Law for the Environment innovated with the incorporation of popular participation on the water management programs and mainly highlighted the basic sanitation issue concerning water contamination. Highlighted points in this topic were: technical and administrative procedures to monitor residual outfall and inspect water quality; preservation of groundwater resources and the re-use of water.
The process of institutional construction for the management of Bolivia’s waters advanced with the discussion of two projects: the 1995 and 1999 Water Law Projects. The 1995 Law Project suggested the concentration of decision-making power and the management by committees representing Bolivia’s three river basin districts, spanning 17 sub-basins. This project was altered by the 1999 one, which proposed that these committees referred to each department of the Bolivian state, being, therefore, administrated locally. Another project, dating back to 2002, brings forth the General Water Law Proposal, which maintains the concept of the three river basin districts, and the management of the 17 sub-basins, in accordance with the 1999 Law Project, reaffirming that management be done by each sector, but supervised by a Superintendence of the Waters, whose attributions are the concession of authorization for usage and exploitation of waters – the right of grant.

President Evo Moraléz’s government promoted changes in the management structure of water resources. Up until the 1990s, management responsibilities fell to the Ministry of Environment and Sustainable Development, then moving to being a responsibility of the Ministry of Sustainable Development and Planning. In 2006, the Ministry of Water was created. In 2009, it also incorporated environmental management, and became the Ministry of Environment and Water.

The management structure, organized from the Ministry of Environment and Water, foresees five dependent, linked agencies: the Technical Social Council – responsible for the dialogue between the Ministry and the population; the Inter-institutional Water Council, which oversees the relations between the Ministry and social and economic organizations; the Vice Ministry of Basic Services, which deals with basic sanitation; the Vice Ministry of Irrigation; the Vice Ministry of Drainage Basins and Water Resources, whose chief attribution is the protection, preservation and sustainable development both of national and international waters.

Also in 2009, the Constitution of the State of Bolivia was approved. Its 5th Chapter includes a section dealing exclusively with water resources, where the need for water as a tool for human survival and development is reaffirmed, as well as the State’s prerogative to protect and manage this resource.

Paraguay, on the other hand, despite efforts in the way of reviewing its legislative base and reformulating the conceptions and rulings of its water resource policies, still has an extremely sectorialized management perspective, with the superimposition of attributions between many government organizations. Despite that, it has been observed that the state possesses a Bureau of Environment, to which the General Department for Water Protection
and Preservation, which coordinates the management of water basins, is subordinated. The country’s chief water resources are the Paraguay and Paraná Rivers’ drainage basins, as well as the Ypoá and Ypacarai Lakes. The attributions of this Board are:

To elaborate and propose management policies and strategies for water resources and their respective drainage basins; to promote the management of water resources taking their multiple uses into account; to perform hydrological studies and analyses at basin and sub-basin levels; to plan, regulate and to control the usage, preservation and recovery of water resources, preserving ecological balance; to form a basis for the environmental management of the drainage basins; to form a basis for the hydrological handling of the basins; to set environmental goals and regulations for the rational usage of water.19

From a purely formal perspective, these attributions are in agreement with the Dublin Statement. However, the country faces great challenges in their implementation. Besides this information, other domestic laws regarding water management could not be located in the Paraguayan government website.

Peruvian policy for the management of water resources tackles some challenges: attending to an increase in demand; improving protection and restoring quality to natural water sources; reducing the impact of extreme events and adapting to climate changes; developing a participatory social conscience in order to manage and evaluate water; and, lastly, reaching a culture of peace in what refers to water (PERU, 2012). The management of water resources foresees a multi-sectorial and integrated management structure, legal certainty to holders of water usage rights and respect for the uses and traditions of native and peasant communities, in an attempt to articulate all three government levels, the private sector and organized players from the civilian society.

Peru shares 34 drainage basins with its neighbors Brazil, Ecuador, Bolivia, Chile and Colombia, and seeks to promote and support bilateral and multilateral agreements for their management; and to formulate and implement binational plans.

From a normative perspective, Peru has been developing efforts to modernize its legislation, surpassing the directions from the 1969 Law Decree n° 17.757, which prescribed a sectorialized management structure, fragmented across various public management agencies. On 2009, with the approval of Law n° 29.338, the National System for the Management of Water Resources (SNGRH) was created, establishing management planning via tools such as: the National Environmental Policy, the National Water Resources Policy and Strategy, the

National Water Resources Plan and the Water Resources Management Plans for their drainage basins. With the new law, the following principles were established for an integrated and sustainable management: mechanisms for evaluating both the water and the integrated management, for prioritizing water access, the participation of the populace, guarantee of legal certainty, respect for the usage of water by native and peasant communities, the decentralization and integrated participative management by drainage basin and juridical supervision (PERU, 2009).

The SNGRH is made up by the National Water Authority; by a few ministries – of Environment; of Agriculture; of Habitation; of Construction and Sanitation; of Health; of Production; and of Energy and Mining – by regional and local governments, by means of qualified agencies; by organizations of both agrarian and non-agrarian users; by operating entities in the hydraulics sector of both sectorial and multi-sectorial character; native and peasant communities; and, finally, public entities linked to the management of water resources.

The National Water Agency (ANA) is the agency of highest technical-administrative authority within the SNGRH. It was created in 2008, and is connected to the Ministry of Agriculture. Its goal is to protect, manage and conserve sustainable development (ANA, 2012a).

Drainage basins are instruments of territorial planning. Due to the large amount of drainage basins in Peruvian territory, and so that a more efficient integrated management could be achieved, administration is performed in a decentralized fashion: 71 Local Water Administrations (ALA) were created, spanning the jurisdictional scope and coinciding with the natural limits of Peruvian drainage basins. These local administration offices are subject to the Water Administrative Authorities (AAA) – larger units that are divided into 14 drainage delimitations, formed by groups of basins, which reach regional geographical levels.

As can be seen, there are many variations pertaining to the juridical ordering and management structure in these four nations, Brazil and Peru possessing more complex and thorough structures, while Bolivia and Paraguay have smaller, more fragmented and sectorialized structures. There is greater proximity between Brazil’s and Peru’s policies, both being very different from Bolivian management structure, and even more distant from Paraguayan policies.

However, it can be noted that these nations have sought to answer to some general principles, chiefly those of incorporating the aspects of an integrated, decentralized and participative management, taking the drainage basin as a basis for governance of the resource.
The differences which have been identified, however, have not hampered the search for a greater degree of cooperation between these nations, although, as will be seen, there are no shared management structures, understood as being supranational structures created for this end and with their own normative guidelines, except for those established by terms of agreements, as will be demonstrated.

**Advances in cooperation for coordinated management of water resources: The cases of the Apa and Acre Rivers**

Available documentation on the efforts towards a coordinated management of water resources shows that there have been advances in regards to the dialogue between Brazil, Bolivia and Peru, and Brazil and Paraguay, in what refers to the management of the water resources of the Acre and Apa River basins, respectively. The suggested denomination of ‘coordinated management’ is due to the fact that the governance structure for transboundary water resources that has been proposed by these players does not point towards the constitution of unified common agencies, guided by a specific normative guidelines, but towards a kind of institutional structure that involves mixed committees, that act in local sections, from the regulatory framework of the concerned nations, but that maintain open dialogue with each other. Examples of that are the Joint Brazilian-Paraguayan Committee for the Sustainable Development and Joint Management of the Apa River Basin’s Water Resources, constituted by a Cooperation Agreement between Brazil and Paraguay, formalized in Brazilian law by Decree n° 7.170 on 6 May 2010, and the Cooperation Agreement between Bolivia, Brazil and Peru for the Sustainable Development and Joint Management of the Acre River Drainage Basin.

As will be seen, these Agreements arose from the dynamics of interaction between the basins’ own players, articulated around Work Groups formed within the scope of Brazil’s National Water Resources Council’s Technical Chamber for the Management of Transboundary Water Resources, acting in tandem with local players from the respective transboundary basins. But, before advancing further with the analysis, it is important to contextualize the two basins.

The Acre River’s drainage basin is located in the Southwestern Amazon, in the border between Brazil, Bolivia and Peru. Its area totals 7,577km², Brazil being the owner of a 41% portion of its drainage territory, while Peru owns 33%, and Bolivia, 26%.
The Acre river is part of the greater Amazonian Basin; its wellspring is in Peru, and its mouth is on the Purus river, which bathes the State of Amazonas. The Brazilian municipalities along the span of the Acre are: Assis Brasil, Brasiléia, Epitaciolândia, Senador Guiomard, Capixaba, Rio Branco, Porto Acre, Xapuri and Bujari, in the State of Acre, and the city of Boca do Acre, in the State of Amazonas. In Bolivia and in Peru, the cities of Cobija and Iñapari, respectively, are within the span of the basin.

The Apa River’s drainage basin is located within the Prata Basin, in the southern tip of the Upper Paraguay Basin (image 10), and covers an area of 15,617.53km², 3,436.22km² of those being in Paraguayan territory, while the remaining 12,181.31km² are in Brazil. Within Brazilian territory, the following municipalities are within the basin: Ponta Porã, Antônio João, Bela Vista, Caracol, Porto Murtinho, Bonito and Jardim, all located in the State of Mato Grosso do Sul. Inside Paraguayan territory, the basin is present in the area of Departamento Amambay, in the cities of Pedro Juan Caballero and Bella Vista, and in the area of Departamento de Concepción, in the municipalities of Concepción, San Carlos and San Lázaro.
Cooperation between the riparian states of the Acre and Apa Rivers can be identified both through the existence of agreements, treaties and protocols, among other official documents, as well as through the dynamics of local interaction on the basins – dynamics which can be observed through the records of the Minutes of meetings hosted by the CTGRHT, which is a part of the National Council of Water Resources, in the scope of the Brazilian National System for the Management of Water Resources. It is important to note that the local players involve groups from both Brazil and neighboring riparian states. In these Minutes, many issues and problems which would posteriorly be present as part of the terms of the aforementioned cooperation agreements are discussed, and a relatively intense participation of local groups can be noticed, in what pertains to the management of the waters in both basins.

Thus, a number of cooperation agreements between the riparian states, on the shared usage of the two basins, have been identified. With a chief focus on the Itamaraty’s records, a review of such documents was made, and a number were singled out: 4 cooperation agreements with Bolivia, the earliest being from 1958; 5 cooperation agreements with Peru, the earliest being from 1909; and 7 cooperation agreements with Paraguay, the earliest being from 1927. Among these documents, these are of particular relevance: the 1958 Preliminary

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20 These official documents are available at http://dai-mrc.serpro.gov.br/
Protocol on Permanent Navigation of Brazilian and Bolivian Rivers in the Amazonian River System; the 1977 Treaty of Friendship, Cooperation and Commerce Between the Federative Republic of Brazil and the Republic of Bolivia, in which an article on the usage of international rivers that traverse both countries is present; the 2001 Joint Management of Water Resources on the Upper Paraguay River Basin Project; and the 2003 Water Resources Legislation Project. Besides these documents, the presence of the aforementioned cooperation agreements for the joint development and management of these river basins and their resources was also verified.

The Protocol on Navigation in the Amazonian System prescribed the creation of a Joint Special Committee in charge of developing studies on the navigability of the span of the Amazon River that is shared by both countries, as well as of applying these studies on the navigational possibilities of the Acre River. With the accrued data and information, both governments would then enter into an agreement to solve the region’s problems, so navigation would be a tangible possibility. The Treaty of Friendship between Bolivia and Brazil spanned a range of areas of cooperation and, among them, reaffirmed free navigation on their shared international rivers, as well as measures to ensure the applicability of that right. The deal for the Joint Management of the Upper Paraguay had, as its main objective, the hydrological monitoring of the basin by means of government agencies already in charge of similar, water-related issues, such as the Brazilian ANA and the Bolivian Ministry of Planning and Environment; the project’s costs being shared equally by both nations. The Water Resources Legislation Project was an agreement signed with the intent of promoting technical cooperation between both parties by means of the interaction between specialists from both countries, and the organization of seminars aimed at capacitating Bolivian specialists, so that pertinent laws could be elaborated.

Concerning Peru, the following documents were identified: the 1909 Treaty Between Brazil and Peru Establishing General Principles on Commerce and Navigation in the Amazon Basin, in which the freedom of navigation for ships in the conterminal rivers of both countries and the freedom for Peruvian ships to access the Atlantic Ocean through the Amazon River are both affirmed; the 1957 Convention on Bases for Economic and Technical Cooperation between Brazil and Peru, in which its Article II details the study of conditions for navigating the rivers of the Amazon Basin as one of the attributions of the Joint Commission. Besides these two, the following documents were also identified: the 1983 Memorandum on the Traffic and Visitation of Warships in Limitary Fluvial Waters, which records the creation of an ad hoc Work Group to elaborate the technical agreement for the navigation of these kinds
of vessels; the 2009 Cooperation Agreement in Relation to the Development of Fluvial Transportation in the Amazonian Rivers, which involves technical and juridical cooperation for the betterment of navigability in these rivers and the creation of a joint work group tasked with implementing and enforcing the fulfillment of this deal; the 2010 Peru-Brazil Complementary Adjustment of the Institutional Strengthening Project for the Integrated Management of Water Resources, whose function was delegated to water management agencies that were already active in both countries, and which would also be charged with promoting technical integration between them.

In what concerns the relations between Brazil and Paraguay for the management of limitary water resources, it is worth registering: the 1927 Agreement on Navigation on the Paraguay River, in which both parties grant one another the same freedom of traffic given to Argentinian ships in relation to the usage of ports and waterways; the 1967 Action Plan of the Joint Brazilian-Paraguayan Technical Commission, which has as its prime purpose the study of the hydric capacity of the Paraná River between the Sete Quedas waterfall and the mouth of the Iguaçu River – the location where the Itaipu Dam was constructed; the 1973 Itaipu Binational Treaty, which prescribes the construction of the Dam; the 1975 Friendship Treaty, which reaffirms both parties’ commitment to continuing the international treaties which grant free navigation on their rivers, as well as to improving the navigational conditions of the Paraguay River; the 1991 Complementary Adjustment of the Deal on Cooperation Concerning Water Quality Measurements, which determines that there should exist a constant policing of the quality of the waters of international rivers, although no specific institutions are created for the task; and the 1994 Agreement for the Conservation of Aquatic Fauna in the Courses of Limitary Rivers, which institutes reciprocal policing and regulates fishing in the Paraguay, Apa and Paraná Rivers, and in the Itaipu lake.

In the 1967 Agreement for the Construction of the Bridge and the Road Connection between the cities of Bela Vista and Bella Vista, it was established that the Brazilian government would be responsible for the construction of the aforementioned bridge, while Paraguay would be charged with giving up the territory necessary for the construction work, guaranteeing that Brazilian materials would reach it free of charge, and connecting the bridge to the Concepción-Pedro Juan Caballero highway. It should also be observed that, at the time of the bridge’s 1971 inauguration, representatives from both parties reaffirmed their commitment to cooperation and integration between the two countries, both in what concerns the management of water resources and the development of the border region.
The previously listed agreements, treaties and other official documents all predate the constitution of the National Council for Water Resources’ (CNRH) CTGRHT, which makes up Brazil’s water management system. This Technical Chamber was created by the CNRH’s Resolution nº 10/2000, as recorded in the Minute of its First Meeting, which took place on 04 July 2000. Records of the discussions related to this Technical Chamber make up the source of the documents examined in this article, and which enabled the comprehension of the process of constructing cooperative agreements for the management of the two drainage basins this study focuses on, in a more recent date.

Considering that cooperation between two players becomes a more viable alternative when there is past history of doing so (HAFTENDORN, 1999), Elhance admits that there are many intervening variables – geographic, political, economic, cultural and so forth – that mediate any resource scarcity-acute conflict relationship (ELHANCE, 1999, p.6). In the case studies present in his work, the author seeks to demonstrate the influence of such variables in the creation of conditions for cooperation, understanding that the hydrology and the geography of an international river basin tie all the riparian states sharing it into a highly complex web of economic, political, environmental, and security interdependencies, leaving them no choices but to interact with one another indefinitely (Idem). These contributions are of chief importance to understanding the consolidation of patterns of cooperative interaction between the riparian states of both basins, as well as the search for alternatives that lead to a better management of their water resources.

This way, and taking the existence of the 1969 La Prata River Basin Treaty into account, the possibility of instituting a Committee for the Apa River Drainage Basin, a Committee that would have participating representatives from both Brazil and Paraguay (MMA/CNRH/CTGRHT, 6th Meeting’s Minute, 19 December 2001), was raised. Discussions on the theme were eked out over many years, until the solemnization of the 2010 Cooperation Agreement. The existence of development projects for the Apa River Basin, as well as discussions on the Paraná/Paraguay Waterway are themes that are contemplated on the Minute of the aforementioned Technical Chamber’s 8th meeting (CTGRHT, 8th Meeting’s Minute, 06 May 2002), and there is observable pressure from members of this Chamber in what refers to advancing the establishment of institutional structures for the shared management of the basin, as can be read in the 9th Meeting’s Minute (CTGRHT, 9th Meeting’s Minute, 16 July 2002). In this same Minute, one may verify the recording of environmental problems in the basin’s region, relative to deforestation and predatory fishing; problems
which reinforce the claim of the local representatives of the Technical Chamber for shared management.

With that in mind, the Technical Chamber’s 15th and 16th meetings’ Minutes, which took place, respectively, on 05 May 2003 and 06 June 2003, deal with the effectuation of a meeting assembled by an Inter-municipal Consortium of the Apa River Basin region, which focused on discussing the local environmental issues, as well as assembling a workshop on the La Prata River Basin Treaty and the Brazilian government’s policy for the Paraná-Paraguay Waterway.

In the CTGRHT’s 18th Meeting’s Minute, which took place on 11 and 12 September 2003, a record of a demand to the political branch of the Brazilian Ministry of Foreign Relations (MRE) is recorded. This demand refers to the possibility of redacting an agreement Minute between the Brazilian and Paraguayen governments, with the intent of establishing institutional mechanisms for the management of the Apa River, a deal which could be added to the scope of the La Prata River Basin Treaty, and which should incorporate the participation of local communities and of civil organizations. There are also records of concomitant initiatives towards the formation of a Work Group focusing on the Apa River Drainage Basin, justified chiefly by the relevance of the basin, and by how it could serve as a pilot experience for the management of limitary water resources.

The configuration of the Work Group for the Apa River is proposed on the CTGRHT’s 20th Meeting, which took place between 17 and 19 December 2003. It was agreed upon the creation of the WG within the extent of the Technical Chamber itself, with the task of proposing the agreement Minute to be solemnized with the Paraguayen government; this deal’s draft would be submitted to the MRE. Commitments were settled between members of the Technical Chamber for establishing contact with similar organizations in Paraguay, aiming at synchronizing initiatives towards the creation of the WG. The agreement’s Minute was forwarded to CTGRHT members on their 22nd meeting, on 03 May 2004. Discussions progressed on the 23rd meeting, on 01 June 2004, where the Brazilian-Paraguayen Commission for the Joint Development and Management of the Apa River Basin’s Statute was discussed.

The initiative towards constituting the WG was forwarded by relevant Brazilian authorities towards Paraguayen government. As an initiative within the extent of the Technical Chamber, the WG was established, and discussions relative to constituting a Joint Commission for the management of the Apa River Basin remained part of the list of subjects to be addressed in their meetings. The proposal of the agreement was taken to representatives
of the Paraguayan government, which received it in an appreciative manner – a fact that is recorded in the CTGRHT’s 30th Meeting’s Minute, on 10 June 2005.

With the objective of furthering the creation of an institutional structure for the management of the Apa River Basin, the execution of a Brazil-Paraguay seminar aimed at the theme was proposed, which only occurred on 2008, according to the CTGRHT’s 45th Meeting’s Minute. According to the records:

The objective of the meeting was to promote the propagation of the Cooperation Agreement between the Government of the Federative Republic of Brazil and the Government of the Republic of Paraguay for the Sustainable Development and Joint Management of the Apa River Drainage Basin and to identify relevant aspects towards the implementation of the environmental and water resources management, by means of the participation of public institutions, civilian organizations and users (CTGRHT, 45th Meeting’s Minute, 04-06 August 2008).

The WG’s initiatives were crowned with the signing of the Agreement and with its integration into Brazilian law by Decree n° 7.170, on 06 May 2010. The objective of the Agreement is to promote the joint and sustainable management of the Basin through the development of strategies that minimize environmental impact, preserve fountains and sources of water, regulate the river’s output, monitor the sustainable utilization of the Basin’s ecosystems and improve the region’s local socioeconomic indicators. For that, it was determined that the Joint Brazilian-Paraguayan Commission for the Sustainable Development and Joint Management of the Apa River Drainage Basin (CRA – Apa River Commission) would be created, with a permanent headquarters at the Ministry of Foreign Relations in yearly alternation, and an operational headquarters in the cities of Bela Vista (Brazil) and Bella Vista (Paraguay).

The Commission was idealized as a “binational agency responsible for the execution of the Cooperation Agreement between the Government of the Federative Republic of Brazil and the Government of the Republic of Paraguay for the Sustainable Development and Joint Management of the Apa River Drainage Basin”, according to its Statute. Its makeup foresees the participation of members of the Ministry of Foreign Relations and of relevant agencies for the management of water resources of each party, their chief functions being that of executing studies for the elaboration of projects to be executed in this region by the government, as well as policing the process of implementing these projects.

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As for the Acre River Basin, more frequent debates began to be recorded on the CTGRHT’s Minutes from their 31st meeting, which took place on 21 September 2005, onwards. This first record concerns conflicts taking place in the basin’s area of influence. The environmental problems which were identified were, chiefly, wildfires caused for agricultural purposes. Participants of the Technical Chamber’s 33rd meeting, which took place on 15 February 2006, expressed concerns towards the State’s absence relative to this problem, and to the presence of large investors in the region. In the 34th meeting’s records, on 06 July 2006, there are registries of the execution of a workshop on the legal aspects and strategic actions for the joint management of the Acre Trinational Basin, whose objectives were to seek solutions for the local problems. This exchange of experiences also sought to promote articulation amongst Brazilian, Peruvian and Bolivian institutions, in an attempt to pursue mechanisms for the joint management. In this process, a suggestion towards the creation of a WG within the CTGRHT’s scope, similar to the Apa River’s WG, was made, aiming at creating these such mechanisms.

The effective actions of the Acre River WG earns it the approval of its work plan already in the Technical Chamber’s 35th meeting, on 17 September 2006, and discussions concerning a Minute for the elaboration of a formal agreement start on the CTGRHT’s 29th meeting, on 10 May 2007. A relevant observation is that attempts to enable the establishment of a formal agreement between riparian countries on the Acre River Basin met greater difficulties to be formalized, and the reasons for such difficulties are not made clear in the reviewed documents, except for the issue with regional floods, which greatly hamper local transit, and the difficulties in obtaining resources to finance joint activities with local groups in the Basin’s municipalities.

This, a final report on the WG’s activities was delivered to the CTGRHT in its 52nd meeting, which took place between 23 and 24 September 2010. It is only on the 54th meeting that a proposal for the trinational agreement is forwarded. Although the CTGRHT’s website does not acknowledge the conclusion of this process, the Union’s Official Journal published, in its 24 October 201122, the terms of the Agreement, which takes into account Principle 2 of the 21st Agenda, in which States “have the sovereign right to exploit their own resources in accordance with their own environmental and development policies, and the responsibility of ensuring that the activities exerted within their jurisdiction or control do not harm other the environment of other States or of areas beyond the limits of national jurisdiction”.

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document’s preface also expresses attention towards Articles 1 and 5 of the Amazonian Cooperation Treaty, alluding to the realization of joint efforts that promote development, professing that joint actions must produce an equal sharing of the benefits obtained through environmental preservation.

The Cooperation Agreement between the Plurinational State of Bolivia, the Government of the Federative Republic of Brazil and the Government of the Republic of Peru for the Sustainable Development and Joint Management of the Acre River Drainage Basin aims to promote: the rational and sustainable usage of resources; the preservation of the basin’s ecosystems; the protection of wellsprings, water sources and riparian vegetation in the region; assuaging possible social and environmental impacts arising from the construction of the Interoceanic Highway, petroleum, oil and natural gas extraction operations; the support for the development of research and technology concerning the usage, transformation and commercialization of wood, aiding farmers, woodcutting entrepreneurs and the indigenous population.

In order to enable the fulfillment of the Agreement, the Trinational Brazil-Bolivia-Peru Commission for the Sustainable Development and Joint Management of the Acre River Drainage Basin was established, which, as with the Commission responsible for the Apa river, would be made up of members of each party’s Ministry of Foreign Relations, as well as of representatives of agencies responsible for the management of water resources in each country; and will have permanent headquarters in each party’s Ministry of Foreign Relations, alternating annually, and operating headquarters in the cities of Pando (Bolivia), Acre (Brazil) and Madre de Díos (Peru).

**FINAL CONSIDERATIONS**

In trying to understand the circumstances that would explain cooperation for the management of the waters, focusing on case studies of the Apa and Acre Rivers’ drainage basins, one can infer that the transboundary aspect of the drainage area and the territorial contiguity of the regions in question; the historically constructed international relations of cooperation constructed in the studied issue areas; the Brazilian management structure of its water resources, which favored an auspicious political climate for the debate and formulation of proposals regarding the erection of specific agreements for the joint management of the studied basins; and the representation of local interest groups in this structure, dialoguing with
social and state agencies of the riparian nations form the objective conditions for the verified advancements in regard to coordinated management of both basins.

The observed experiments of the management supervision of transboundary waters have pointed towards the coordination of actions, driven by the regulatory domestic laws of the riparian nations. Research shows that joint management is not adopted, and that nations seek to establish institutional formats that, above all, do not harm their sovereignty over their water resources. Structures for coordinated management are the agreed-upon format, and they are actualized by the creation of joint commissions with domestic sections, with common norms for acting within the basins, but guided by the legal norms which rule the management of waters within the territory of its respective nation and in which, with specific demands for the shared use of the resource or its exploitation for specific ends, the principle of state sovereignty over the territory has been prevailing.

As for the strategies adopted by the nations, towards the construction of these institutional structures, one can affirm that such strategies are strongly anchored upon domestic structures, whose legal boundaries rule which strategies are made viable and available. With this normative baseline in mind, processes are dynamic and long-lasting, with discussions and settling of consensual areas in regards to the terms of cooperation, to the agreement towards protecting the sovereignty of the involved nations and to the non-questioning or absence of attempts of altering these nations’ domestic policies for the sector. Clearly, the production of benefits is sought, though the basis for their distribution was not studied here. This can be, most certainly, one more step to be taken in the efforts of investigating the theme in South America.


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