Bolivian Water Wars
The Creation of Political Opportunity for Adaptive Governance

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Introduction

In Bolivia, more than sixty percent of the rural population does not have access to drinking water and only eleven percent of agricultural communities have at least partial access to irrigation (De La Fuente 1-2). The water wars in 2000 represented public disapproval of the limited water services provided by state and private institutions. However, Bolivia’s water problems reflect more fundamental issues than can be articulated through the term ‘unsustainable resource management.’ As our world shifts from state sovereignty to transnational and localized efficacy, Bolivia’s polity is struggling to shift from a system of government to a system of governance. Consequently, in this policy brief, we identify problems with the municipal and private management of water.

As of present, the Bolivian government has embraced a lateral perspective towards the creation and implementation of water sanitation and distribution systems. Departing from an administrative rationalism’s centralized, bureaucratic approach of resource management, Cochabamba needs to adopt a more networked, trans-media approach that will debase tensions and create a climate for innovative solutions and multilateral participation. Utilizing mechanisms for adaptive management such as participatory rural appraisal, one can map available resources, identify stakeholders and recognize usage needs for both personal and agricultural consumption. After assessing state and private models for resource management, one finds that a decentralized, adaptive governance approach is the most efficient means to create stable, efficacious institutions for water management and distribution.

Historical Overview of Water Management Conflict

Beginning in 1970, the Bolivian government attempted to create a new governance system by enacting bylaws that instituted private agencies to control service sectors (Marvin, 347). Subsequently, in a movement to debase inflation, President Victor Pas Estensorro established Edict 21060 in 1985, which roused a movement towards the privatization of previously nationalized industrial goods such as petroleum, telecommunications, railroads, airline, and mines. This shift in resource ownership resulted in higher unemployment rates, deterioration of working conditions and increased domestic consumer costs for service (Biddle, 1).

During this period, the city of Cochabamba experienced a storm of events culminating in violent protests. Between 1976 and 1992 the population experienced rapid growth from 205,000 to 414,000 people, yet governing authorities did not respond to the shift in demographics with corresponding improvements in the city’s infrastructure. For example, access to drinking water and sewerage systems were available to only approximately forty-eight percent of the population (Assies, 19). Some highly politicized public works projects such as the MISICUNI Project were proposed, but did little to address service concerns. The multipurpose project intended to capture and transport water to the city through a series of tunnels and aqueducts. However, due to an inaccurate cost assessment performed by the service agency Aguas del Tunari, the project never broke ground (Assies, 19). Opposed to the actions of private sector management, state agencies attempted to resolve problems through a series of shorter term projects. However, drilling projects to address water scarcity resulted in a depletion of
groundwater supplies in the neighboring community Quillacolla. As a consequence, the Cochabamba chapter of the Society of Bolivian Engineers was forced to consider alternative approaches to address water scarcity (Assies, 21).

In June 1999, the World Bank advocated for the privatization of water distribution systems in a detailed report on Cochabamba’s water problems. In response, the Bolivian government enacted Law 2029, giving forty-year water concessions to private enterprises in large cities. The law did not require a guarantee of water services to rural areas, prohibited personal rain collection systems, prevented townships from determining the location of wells, and instituted high water payments for usage (The fight for water and democracy, et.al.).

This same year, the Bolivian administration began to solicit bids for a joint water concession with SEMAPA, Cochabamba’s Municipal Potable Water and Sewerage Service. The only enterprise to show interest was Aguas Del Tunari Consortium, a transnational subsidiary of the U.S. corporation Bechtel. Calling for a four hundred percent increase in water prices, the contract was immediately opposed by local organizations that feared that increased prices for irrigation water would drive farmers into bankruptcy (Assies, 22).

The people of Cochabamba—rich, poor, urban, and rural—united under the Coordination for the Defense of Water and Life, a coalition of trade workers, to claim water as a right and not a commodity to combat the legitimacy of the state’s agreement to recede water ownership to foreign actors. Quickly, concerns over the privatization contract turned into vocal protest and then violent rebellion. On December 28, over 15,000 people mobilized in central Cochabamba for over four days demanding revisions to Law 2029 and the contract (The fight for water and democracy, et.al.). As a result, the government signed an agreement with the Coordination on January 14 promising to revise the law and contract; the price hikes, however, were neglected. However, inaction over a period of two months made it clear that the government had no intention of honoring the agreement with Coordination.

In reaction, on February 4, 2000, citizens once again filled on the central plaza in a peaceful protest. Despite the peaceful nature of the collective action, the government responded with violent tactics for control such as the use of police dogs and threats with random gunfire. What originally began as a peaceful civil demonstration escalated into a two-day street war that ended with 175 people injured and another ineffectual agreement between the state and Coordination to revise the water law and management contract (The fight for water and democracy, et.al.). With popular demands for increased service distribution and quality once again ignored, consumers reorganized for a collective protest on 4 April 2000. Mirroring preceding protests, a street war erupted causing the death of a seventeen-year old boy.

After three violent protests, the state governor finally ruled in favor of breaking the contract and—against the will of the national government—Aguas del Tunari decided to leave the country voluntary (The fight for water and democracy, et.al.). Bolivia’s Congress modified Law 2029 as requested by the Coordination, allowing for control of water resources to be returned to SEMAPA.

Although water rights have been turned over to SEMAPA, problems in the region with water distribution and sanitation still remain. Water is distributed only five days a week, often with low pressure and the questionable quality forces most
Cochabamban residents to buy bottled water for drinking and cooking. In addition, bureaucratic inefficiencies are continually being questioned. For example, over seven hundred employees were hired by SEMAPA to support service operations when outside studies determined that only 270 people are required. The history of bureaucratic inefficiencies and irresponsible institutional system to deficient services demonstrates a need for an alternative—more stable—system to distribute water services (The fight for water and democracy, et.al.).

**Failures of State and Private Water Resource Management Institutions**

Bolivia’s water wars resulted from an oversimplification of institutional options for management and distribution. Following Garrett Hardin’s Hobbesian theory of human nature and social order, Bolivia experimented with central government and private institutional arrangements. Both Hardin and the Bolivian government assume that when human rights are applied to water resources, the result will be resource misuse and degradation (Dubreuil, 1). Management strategies based on self-governance institutions result in what Hardin refers to as a “double bind” (Hardin, 7). Reflecting Hobbes’ and Locke’s theory of self-seeking individuals, self-interest will always override community ambition. Self-interest creates a polity where man cannot trust his neighbor to communally and equitably monitor resource use. In consequence, both Hardin and Bolivia’s central government proposed state control and privatization as the only two plausible solutions to manage resource distribution and extraction. However, the lack of inclusion in decision-making processes abased the legitimacy of the institutional structure, which induced public hostility towards the institutional structure.

**State Model for Water Resource Management**

The control of water resources by the Bolivian government adheres to the hierarchical, centralized structure of administrative rationalism (Dryzek, 87). Administrative rationalism views the government as an expert actor embedded with the primary agency for action. In Bolivia, the government placed the Basic Services Vice-Ministry, a national agency in the Ministry of Public Works and Services, in charge of the planning and development of basic drinking water and sanitation services. At the departmental level, Department Prefectures’, in the Departmental Unit of Basic Sanitation and Housing, was responsible for providing technical expertise to companies contracted to execute water drilling projects. At the regional level, municipal governments provided, operated, and maintained the drinking water and sanitation services under their jurisdiction (De La Fuente, 4-5). Consistent with Dryzek’s discourse, Bolivia’s structure for water management was highly bureaucratic, compartmentalized, and reliant on technical expertise of only governmental officials.

As a consequence, the state model was institutionally weak, inefficient and unable to deal with the multidimensional and interactive problems associated with water resource management. Governmental agents with the most comprehensive responsibilities consistently moved from department to department, demonstrating the agents’ lack of power within the centralized system and the low prioritization of water services within the institutional structure (De La Fuente, 4-5).
Additionally, the centralized management departments had little or no involvement with municipal governments, leaving most water management practices to informal local cooperatives. These local cooperatives managed water systems based upon local customs and norms to regulate use for drinking and irrigation. The nature of these systems underscores the disconnect between the citizens and the state-controlled bureaucracy seen in the administrative rationalist discourse. When the state did intervene, its investments were heavily biased towards urban areas. One specific plan proposed water coverage benefiting equivalent numbers of urban and rural inhabitants (1,397,000 and 1,365,000, respectively) but ultimately created a tremendous disparity between inhabitants who actually received service—1,792,300 urban but only 521,000 rural inhabitants, less than 40% achievement (De La Fuente and Campanini, 7, Chart 4). Such disparity speaks to the urban-rural power struggles that constrain the efficiency of water and sewer systems run by the state.

**Market Control and Privatization of Water Resources**

In 1985, President Victor Paz Estenssoro adopted a ‘New Economic Policy’ (NEP) to placate the Washington Consensus policies’ pressure for neoliberal structural adjustment. With the nation facing a fiscal deficit, high inflation rates and a decline in main exports such as tin and coal, NEP aimed to devolve state power by reforming the structural approach to previously nationalized service sectors (Biddle, 1). As the state seceded control of industries, capitalism and market adjustments began to define norms for social order and consumer behavior.

One of the sectors to come under privatization was water services in Cochabamba, Bolivia. Propelled by external forces such as the World Bank and the International Monetary Fund, the Bolivian government awarded a forty year concession to the transnational, foreign-owned water consortium Aguas del Tunari—the only private corporation to place a bid for Bolivia's water resource. The contract included not only a forty year commitment, but also guaranteed sixteen percent blanket returns and approval to start the Misicuni Project to bring water in from an outside water source. In a privatized system, where the private conglomerate has no grounded commitment or sense of responsibility toward the community in which they are serving, performance-based returns is the only thing that guarantees the best and most appropriate service. Consequently, the Bolivian government's contract with Aguas del Tunari along with the establishment of Law 2029, which granted Aguas del Tunari monopolistic control over the water resource, paved the way for a corrupt partnership that worked against the needs and concerns of the people.

The aggressive move to privatization was poorly implemented by the Bolivian government. In a successful privatization model, the government would be held accountable for the standard of service provided by establishing a regulatory framework within which the private conglomerate would operate. A regulatory structure would secure accountability by dispensing monetary compensation only in relation to the quality of services provided. However, in Cochabamba, the government failed to adopt a regulatory position within the market model, therefore enabling Aguas del Tunari to abuse its power of ownership and establish a management system that was antagonistic to the needs of the majority of the population. Furthermore, the government’s financial
investment in Aguas del Tunari complicated interests, and therefore de-legitimizing the management structure. Some governmental actors were also stakeholders in the private consortium. Consequently, the combination of state and private agencies resulted in a system that gave low priority to the interests of the people.

In the context of Polyani’s Double Movement, the state, torn between economic liberalization and social protection, chooses to side with the merchant class. This collaboration leads the way toward false commoditization of the water resource, economic security/guaranteed economic gain for the private corporation at an unfair cost to the people, and instability of the current democratic system.

In Bolivia’s market model for resource management, the state abused their power and fell victim to false commoditization of water resources. The government does not have the jurisdiction to sell the property rights of a public resource such as water. Turning toward privatization places a resource under the jurisdiction of a private corporation, and thus, brings in another set of market interests that may or may not be conducive to the public good. Since the private corporations are players in the market, they are guided by economic incentives, which lead to further commoditization of the resource. With an alliance between state and private sectors, the citizens are left vulnerable to the abusive actions of the private consortium. For example, because there was no accountability mechanism, Aguas del Tunari went as far as to bill people without access to water.

When the government and private consortium team up, their interests are shared and thus, take precedent over the interest of the people. Because there was a lack of user involvement, constituents were forced to use untraditional democratic channels to voice their concerns, which threatened the stability of the ruling system and thus, inspired a defensive and violent response from the government. This hostile encounter diminished trust in the government and belief that the system fights for you rather than against you, which should be the dominating ideology in any well-functioning democracy.

Creation of a Structure for Political Opportunity

A social movement results when interested parties act collectively against a political structure that is contentious to their individual or group interests. Groups that engage in collective action are attempting to institutionalize their group—therefore their interests—in the political arena. When a group is an institutionalized actor in the governing system, this implies that the group has the clout to coordinate and structure patterns of behavior. The establishment of one’s interest group as a legitimate and efficacious force provides afflicted individuals with the political agency to act through a centralized body that can negotiating with and lobbying to government officials and agencies. The institutionalization of interest groups into the political arena is dependent on the structure of political opportunity.

The political instability resulting from vacillations between state and private water resource management created a window of opportunity for challengers of the regulatory system. The framework for political opportunity is structured around the notion of members and challengers. In Cochabamba, the members were the state’s regulatory officials and the private corporation. Under a privatized model, the state acted only as a regulator. Aguas del Tunari, operated as the Basic Sanitation Superintendence, designated with the agency to grant and revoke resources, set rates for use and control
performance of the Drinking Water and Sewer System Service (Fuente, 11). The challengers are the rural poor who received inequitable access to water and sanitation services compared to urban and industrial sectors. In Cochabamba, internal tensions and instability establishes enough flexibility for outsiders to exploit institutional weakness and leverage their position in the political arena.

**Political Instability**

The implementation of a private model for water resource management undermined the constituency’s conception of democracy and popular sovereignty. The rights to water were relinquished without public debate or political transparency in the decision-making process. Generally,

> Among the events and processes likely to prove disruptive of the political status quo are wars, industrialization, international political realignments or concerted political pressure from international actors, economic crisis, and widespread demographic changes. (McAdam, 41)

In the case of Cochabamba, industrialization, political realignment and demographic changes created enough institutional weakness for the challengers to elevate themselves into a position of increased political strength without threatening the institutional foundation of elite governmental actors.

**International Pressure**

In addition, international pressure from the United Nation’s agencies and committees catalyzed the movement for universal access to water. Specifically, the millennium goals on drinking water and sanitation drafted during the 2000 UN Millennium summit and General Comment 15 published in 2002 by the UN Committee on Economic, Social and Cultural Rights (CESCR) provided the legal framework and expected norms for behavior that legitimized local actor’s campaign for water rights. During the UN Millennium summit, members developed plans to help meet the needs of the poorest countries. One of the central goals drafted is to double the number of people who can access or afford safe drinking water by 2015 (De La Fuente, 9).

**Goals in Terms of Percent Coverage** (De La Fuente, 9)

**DRINKING WATER**

**SEWAGE**
While centralized state and private water management institutions have been able to successfully service urban areas, they have been unable to achieve the millennium goals for drinking water and sanitation in rural regions of Bolivia (United Nations Status Report, Bolivia).

CESCR’s General Comment 15 increases pressure on state governments to implement policies that establish universal access to water. In this doctrine, water is identified as a limited resource that is required to preserve human rights as defined by other international treaties such as the Universal Declaration of Human Rights (UDHR). The UDHR states that every person has the human right to natural or social resources that ensure an adequate standard of living and protect one’s right to life and dignity (Universal Declaration of Human Rights, Article 22, 25). As a legally enforceable counterpart to the UDHR, General Comment 15 states that “the human right to water entitles everyone to sufficient, safe, acceptable, physically accessible and affordable water…users” (Cite specific article). By establishing access to water as a human right, the CESCR’s doctrine creates the legal foundation for an individual’s the right to water for subsistence means:

Attention should be given to ensuring that disadvantaged and marginalized farmers…have equitable access to water and water management systems, including sustainable rain harvesting and irrigation technology…states…should ensure that there is adequate access to water for subsistence farming and for securing the livelihoods of indigenous peoples. (General Comment 15)

With approximately 62% of the Bolivian population identifying themselves as indigenous, General Comment 15 acts as a legal mechanism validating Cochabamba’s movement against the state and market commoditization of water.

Decentralized Governance System for Water Resource Management

The unreliable and limited services resulting from the implementation of centralized state and private water management institutions produced pandemic civil unrest, which manifested itself public social protest. The central source of contention was the lack of legitimacy of management institutions. Legitimacy of the system is established through inclusion in and transparency of the decision-making process. Therefore, the management of water resources requires a decentralized system of governance, rather than an exclusive structure for centralized control. The lack of flexibility and practice of adaptive management was a central failure of previous regulatory institutions. By adopting adaptive governance structure, the government and the community are able to cooperate to address pervasive issues such as water scarcity, sanitation and distribution.

Coordinating Mechanisms and Participatory Forums

The key aspect to a successful decentralized management system is participation through communal interactions, branched networking (vertical and horizontal interactions), and cooperative sharing of information/knowledge. Decentralization centers on a more integrated, communal, non-bureaucratic rule, which is why this system is
likely to be a successful resource management model in Cochabamba. Most importantly, a social model of associations and networks needs to be established so that there is a means of participation, a strong market of buyers and sellers, and a channel for systematic representation and governance.

The association model is dependent upon the power of small groups or organizations embodied in the larger framework of the state institution. The increased opportunity to interact within groups with smaller membership bases creates a social network of interdependent actors. In addition, increased interaction intensifies the social cost of breaking bonds of trust and abusing power accumulated in social capital. These vertical networks become useful when they become institutionally associated with horizontal networks of actors such as regional and state governmental agencies. With a multi-lateral framework, the association model establishes the means combine extracted tacit knowledge with the agency power of governmental institutions.

The association model can be actualized through participatory forums. Participatory forums bring together stakeholders including agricultural user groups such as The Coordination for the Defense of Water and Life, non-governmental organizations such as the Civic Committee, and state agency officials from SEMAPA. Forums can take shape in the form of informal meetings, citizen panels or committee hearings (Bruns, 15). These intercambios¹ not only serve as a mechanism to share information and promote innovative problem-solving techniques, but also provide an arena to clarify water rights. By recognizing the human rights to water present before the move towards privatization, stakeholders are able to gain security from knowing that their rights will not be revoked. In addition, the management institutions gain legitimacy from including a diverse range of stakeholders in the deliberation process and using accurate knowledge of local conditions to address specific problems with water services.

Local water committees

In a decentralized system with common-pool resource ownership, members have the right to control access, withdraw, management, and exclusion of the resource. The right to access, withdrawal and manage the resource are delineated by local water-use committees. These water committees consist of a small group of elected or appointed community members. The local water committees fulfill the role of small service providers that have the agency to implement, operate and maintain technical systems to ensure high water quality and equal distribution of services.

Functioning off of aggregate social capital, these committees allow for greater participation by allowing local users to act as member representatives. Social Capital enables collective action through the strength of trust, expectations, and networks within a group (Pretty, 1913). With greater knowledge of the resource and usage needs, local water committees are better able to make effectively implement management and distribution systems as well as resolve conflict without suffering the temporal and fiscal costs associated with bureaucratic institutions. In addition, local water committees provide an institutional platform for previously powerless groups to voice their interests and claim their stake in water resources. By dividing a larger water management system

¹ Spanish word that implies a joint exchange of information; there is no direct word in English that connotes the same definition.
into smaller regional or community sectors through water committees, Cochabamba is better able to meet a community’s diverse water needs and manage sanitation services.

*Tradable water rights*

Tradable water quotas, or spot markets, formally establish rules for exercising the right to exclusion of common-pool water resources. According to Elinor Ostrom, exclusion is the ability to set standards for the transfer of the rights to access and withdrawal resources (Ostrom, 339). Spot markets result when an owner sells or lends a predetermined portion of his/her water resource for a specified period of time (Hearne, 188). Exercising the right to exclusion through the formal or informal establishment of spot markets allows disenfranchised individuals to temporarily become authorized users, which includes the right to access and withdrawal water resources. By increasing the number of authorized users, owners are better able to mitigate water and utilize the entire resource system. In areas such as Cochabamba with water scarcity, these voluntary transactions increase the efficiency of the system because owners can gain by temporarily selling the right to access and withdrawal to others (Bruns, 10). These exchanges can be informal and temporal. For example, irrigators can exchange or share water rights based on need and season.

Although individuals have the right to temporarily exchange or transfer rights to access and withdrawal water resources, owners do not have the right of alienation. Alienation is the right of an owner to “sell or lease management and exclusion rights” (Ostrom, 339). Under a system of common-pool resource management, local water-user committees and water users’ associations have the authority not only to oversee and monitor transactions, but also have the authority to make any final decisions regarding reallocation and/or transfer (Bruns, 10). These committees and associations regulate the water market to ensure that ownership rights are not being transferred in ways that undermine the public interest and integrity of the water system as a whole.

**Conclusion**

When discussing Cochabamba’s management system, the central question to address is policies and institutional structure will prevent Bolivia from erupting into another series of water wars. To formulate a response, one needs to address two major areas to achieve effective change. First, the government needs to reevaluate its status quo, lateral perspective towards creating and implementing water sanitation and distribution systems. Secondly, the government needs to create a networked bureaucracy that allows for local knowledge to be accessed and utilized as an expert and technical problem-solving resource. Preceding 2000, the government’s perspective towards water management was tainted by external forces such as a global recession and the Washington Consensus, therefore impairing the central government’s ability to rationally access the multi-faced issues surrounding water resources. By transferring water rights to the private sector, the government failed to consider the consumers’ ability not only to physically access water, but also to pay for water usage. The inability for the central structure to assess the needs of the constituency reflects the need to establish a more participatory, transparent and accountable institutional framework for water resource management.
An adaptive governance approach to water resource management establishes mechanisms for institutional coordination through associations establishes a system of overlapping networks that function to create dependency and mutual accountability that creates stability by raising the cost of deviation. In consequence, we conclude that by utilizing the rich pool of resources imbedded in Cochabamba’s social capital, a decentralized governance system could provide the legitimacy and transparency necessary to abate social contentions and establish institutional stability.
Bibliography


Bisogni, James J., Associate Professor. College of Engineering, Cornell University. Personal interview. 10 Apr. 2007.


