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After the Water Wars: The Search for Common Ground

After 32 failed attempts to reach consensus on water legislation and a deadly social conflict over water rights, IDRC-supported researchers in Bolivia have helped their country develop a water law that everyone could agree on.

"Our country cannot afford the luxury of having legal norms that are repealed or abolished days or months after being approved."

Juan Carlos Alurralde,
Agua Sustentable

The Development Challenge: Turn conflict into collaboration for policy-making

Water has always been a controversial issue in Bolivia. Water is a scarce commodity in much of the Andean country – and in other regions where there is ample rainfall, access to water is hotly contested. It has been extremely difficult to find agreement on how the resource should be regulated and who should have legal rights to it. The Government of Bolivia has made 32 attempts to achieve consensus on a comprehensive new water law — one that would update a law with colonial roots that has been on the books since 1906. None were accepted.

In 1998, the issue of water rights came to a boiling point when the Bolivian government proposed legislation that allowed for the privatization of water and provided a private, foreign-owned company, Aguas del Tunari, with a concession to sell water in Cochabamba. The company paid nothing for the water concession, which was given without regard to the customary users of the water. For the first time in recent Bolivian history, social groups mobilized in protest. By 2000, the country was paralyzed by blockades; lives were lost in riots; the government was destabilized and facing political crisis. Bolivia's "Water War" hit the front pages of newspapers worldwide. The government was forced to break the contract with Aguas del Tunari and to promise more open debate on the issues. An official special council, the Consejo Interinstitucional del Agua (CONIAG), was created at the suggestion of civil society and social organizations, and was charged with drafting a water management law based on public consultation. This was an unusual gesture: Bolivia had rarely sought public input into policy-making.

For Bolivian water engineer Juan Carlos Alurralde (known as Oso Andino), the creation of CONIAG represented a unique opportunity



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Harvesting potatoes on the shores of Lake Titicaca.

to find a “made in Bolivia” approach to water management. Alurralde is Director

of Agua Sustentable, a nongovernmental organization (NGO) that had been focusing on water issues. Agua Sustentable is a research arm of the Comisión para la Gestión Integral del Agua en Bolivia (CGIAB), a network of NGOs, research organizations, and civil society groups. Experienced in working with both social groups and the Bolivian government, he was convinced that dialogue based on solid research could help point to a fair and efficient model for water management that everyone could accept. However, mistrust was riding extremely high between social groups and the government; no one was underestimating the challenges of finding a path to mutual agreement.



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“Lack of social consultation today leads to social unrest tomorrow.”

Juan Carlos Alurralde

The Idea: Combine grassroots dialogue with high-tech science

By using a state-of-the-art mathematical model, researchers could simulate how effective various approaches to allocating water rights would be — information critical to developing a new water law. However, researchers also understood that while the government had experts who could evaluate the research, social groups did not. If social groups did not trust the research, there was a risk that they would reject the findings. So, the researchers decided to include social groups that had protested the water law in the research process — by inviting them to participate in the research design, asking them to help gather data, and regularly communicating and explaining their findings. In effect, the researchers would be using both technical and social science in their approach. Canada's International Development Research Centre (IDRC) supported the research project, which ran from 2002 to 2005, with a CA\$270 000 grant.

The Research: Analyze two hotly debated approaches

Researchers used a water simulation model developed by the Danish Hydraulic Institute to build a computerized replica of selected Bolivian water systems, taking into account seasonal changes. They fed the model with existing cartographical information and data on water, precipitation, and climate. A Geographic Information System (GIS) was used to map water rights. A database of existing customary (or traditional) water rights was also developed through lot-by-lot field work and surveys. Members of irrigators' groups and farmers were involved in collecting this data. Information was used to project which approach to water management would be most efficient: the one favoured by the government or the one Indigenous communities believed would be best.

On the Ground: Clarifying the debate

Research issues, methods, and results were discussed and then developed with the participation of a broad range of social actors, including researchers, members of grassroots social movements and NGOs, government technicians, academics, and senior government officials.

Researchers simulated two scenarios: granting concessions by unit of volume per time (litres per second) for specific uses and managing water according to the traditional uses and customs currently in place, based on collective ownership of water for multiple uses. Researchers also estimated how much water was lost, for example through filtration and leaks.

Research revealed that the approach favoured by the government (volume per time) would lead to a more inefficient use of water and cause larger differences in water availability between communities, actually resulting in water deficits in many cases.

The Impact: Water rights are defined in law

On 8 October 2004, the Government of Bolivia promulgated law number 2878 — ley numero 2878, de Promoción y Apoyo al Sector Riego. The law takes into account Agua Sustentable's research by recognizing traditional water rights and uses, and guarantees rights to water for irrigation for Indigenous and farming communities. It has gained widespread acceptance. By regulating rights for one of the major uses of water in Bolivia, the approval of Law 2878 is a huge stride toward formulating a general water law. It is also one of the first times that evidence-based research has been used as the basis for legislation in Bolivia. Moreover, the passing of the law also illustrates that water policy need not be an issue that necessarily leads to conflict.



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Implementation of the law

A second phase of the project began in April 2005 with a primary focus on testing the methodologies under more complex conditions in order to develop the regulations that will permit implementation of the law and ensure that this legislative mandate produces practical benefits. One of the first actions of the new government, elected in late 2005, was to create a water ministry to coordinate and oversee water issues. Members of the Agua Sustentable team were active both in articulating public pressure to have the ministry created, the actual design of the ministry, and in assuming key roles within the ministry after its formation. The first vice-minister for basic services, for instance, is from the Agua Sustentable team. Researchers are testing and fine-tuning the procedures for identifying and registering legal claims to water. This will permit a registry of traditional water rights to be created so that Indigenous peoples, peasants, and small farmers can exercise their ancestral claim to use the resource.

Tangible Benefits: water rights key to economic development

Economists and other development specialists agree that well-defined and secure property rights for water and other resources are key to ensure economic growth, equity, and sustainable resource use. By using state-of-the-art GIS and helping establish a common data base to register water rights, this new technology provides a very cost-effective way to guarantee Bolivian smallholders their traditional rights to water, help eliminate conflicts, and give them the confidence to make productivity-enhancing investments on their land.

Water is a scarce commodity in much of Bolivia.



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Future Challenges: Extend the approach

Researchers need to examine if the approach developed by Agua Sustentable can be extended to solve other conflicts over water or used in other countries. In addition, Law 2878 provides for a new authority in charge of granting water rights. Agua Sustentable is investigating how the tools developed in the research project could be adapted so that a research-based approach can be applied to international waterways.

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