

Market Approaches to Water Allocation: Lessons from Latin America

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Abstract: Latin American experiences with water markets offer lessons to the U.S. because they have emerged in different political and economic contexts. The Western U.S. experience has been longer and has defined some of the world's classic cases of market allocation of water. These cases, however, have been driven by domestic factors and have evolved within domestic social and institutional contexts, which are easy for people in the U.S. to take for granted. Looking at Chile and Mexico can help us see Western U.S. water allocation with fresh eyes. These Latin American cases have been strongly influenced by international theories and policy debates, forcing the question of how to adapt foreign ideas to local realities. The Chilean case in particular shows the strong relationship between market approaches and institutions for water governance and sustainability. A comparative perspective might help loosen the gridlock that characterizes many Western U.S. water problems.

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What can the Western United States learn from Latin America about market approaches to water allocation? The Western U.S. is the part of the world with the longest experience of such approaches, having entered the “era of reallocation” in the 1970s.¹ At about that time, a variety of political, economic, and environmental factors combined to make it hard for the U.S. to keep building dams and canals in order to increase water supplies, which had been the traditional policy response to new demands for water. Since then, most new demands for water have had to be satisfied by re-allocating existing supplies, and market mechanisms have been a prominent and controversial way to do that.

Market approaches to water allocation emerged in Latin America a decade or two later, and in political, economic, and social contexts that are quite different from the U.S. The most obvious difference is that Latin American countries have been poorer and less developed than the U.S. Another difference is that Latin American governments have had to grapple with international actors and influences that U.S. water managers and policy-makers have been able to ignore.

I will argue in this essay that despite the longer

experience of the Western U.S., Latin American approaches to water markets can deepen the U.S. understanding of institutional frameworks and their effects on water governance and sustainability. I will illustrate this argument by looking briefly at the examples of Chile and Mexico, the two countries with the most experience of water markets in Latin America (and not coincidentally, the two countries with the longest histories of irrigation under Spanish colonial water law). The argument rests in part on the idea that water *allocation* is not the same thing as water *management and governance*. For some readers this may be obvious. But I have found that many water experts use the term “allocation” as if it were the core feature of a water rights regime. In contrast, my own view is that water allocation is only a part of water management and governance – a critically important part, to be sure, and perhaps a defining feature, but nevertheless only a part.

Doug Kenney makes essentially this same argument in describing the Western U.S. for a book about international perspectives on water rights reform. In a concise and valuable synthesis for an international audience, he argues that “most water issues in the region can be summarized by a single word: competition.” However, “[t]o describe this

competition in terms of allocation...is to ignore the richness of the conflicts; similarly, to distill this competition to matters of water rights is to miss the role of politics, culture, and economics” (Kenney 2005:174).

The Western U.S. and the International Water Markets Debate

Let me begin with a little personal background. I spent most of six years in graduate school studying water in the Western U.S.: history, geography, law, policy, and political economy. This included my master’s thesis, on the history of water rights and water development in Washington State, and also my work as a teaching assistant for undergraduate courses in environmental studies at U.C.-Berkeley. So I was fully immersed in Western U.S. water issues by the time I went to Chile to do my dissertation research on Chilean water markets and water law (in 1991).

I chose that dissertation topic because I wanted to broaden my international perspective, but at that time I assumed that I would return to California and Western U.S. water issues within a few years. Things did not turn out that way for two reasons. First, I got stuck into the vortex of Chilean history, landscape, law, and society as I tried to make sense of the water rights issues I had gone there to study. My fieldwork took twice as long as expected and I picked up some consulting work for the United Nations in order to pay the rent. Chile got its hooks in me and has not let go.

The second reason I kept my focus overseas is that the 1990s were an exciting time in international water policy circles. I lived through some of this myself, thanks to my knowledge of Chile, which became a paradigmatic case of free water markets. There was the Dublin Conference on Water and Environment and the Earth Summit in Río de Janeiro, both in 1992, and the phrase “water is an economic good” became fighting words to many people. The World Bank was pushing a crude ideological version of neoliberal water reform in countries throughout Latin America, Asia, and Africa, despite the fact that plenty of people within the Bank disagreed with that version. The Global Water Partnership was created in 1996 to spread the word about Integrated Water Resources

Management (IWRM), a slogan that has meant less and less as the years went on (Conca 2006: Ch. 5). By the end of the 1990s, water privatization, pricing, and market approaches were the headline acts at huge international water conferences, with the battle-lines drawn between NGOs, multinational corporations, international organizations, and government agencies. The World Commission on Dams report in 2000 was another landmark event in the debate about water governance.

Amid all that international water controversy, the role of the U.S. was surprisingly small. Certainly there were plenty of individual U.S. water experts who moved in international circles, and many more foreign water experts who had either studied in U.S. universities or who had read some of the abundant literature about U.S. water issues (in English, of course). Many foreigners referred routinely to classic examples of U.S. water development such as the TVA, Hoover Dam, Bureau of Reclamation projects throughout the West, and the mega-waterworks of California. Foreign water experts have also looked to the Western U.S. since the 1970s for pioneering examples of environmental protection and water markets – two trends that have defined much of the current era of water in the West.

Nevertheless, I think it’s fair to say that international interest in Western U.S. water management has waned over the last 10-20 years. Why? One reason is that water policy debates in the U.S. have continued to be remarkably inward-looking. Most U.S. water experts and policy-makers show little awareness of the dramatic events and conflicts that have shaped the international water arena. A second reason is that U.S. examples that once seemed pioneering have come to look more like gridlock: for example, the Cal-Fed and Bay-Delta process in California. Undoubtedly there are still many examples of local and state innovation; the U.S. is a big and dynamic country. From an international perspective, however, the U.S. water scene seems out of touch and dominated by local history and politics that are less broadly relevant than in decades past.²

Lessons from Chile

For nearly 20 years, Chile has been famous in

international water circles for being the world's leading example of a free-market approach to water law, economics, and policy.³ Chile's 1981 Water Code has become the textbook case of treating water rights not merely as private property, but also as a fully marketable commodity. Many other countries, including the U.S., have recognized variations of private property rights to water, but none have done so in as unconditional and deregulated a manner as Chile. Because the Chilean Water Code is so paradigmatic – an example of free-market reform, designed and implemented by a military government with a strong ideological viewpoint – people around the world have disagreed about whether the “Chilean model” has been a glorious success or a disastrous failure or something in between. The model's proponents have sometimes recognized its flaws, but their tendency has been to play down the importance of those flaws and instead to emphasize the model's advantages.

The Chilean model of water markets and allocation is different from other countries in an essential way. In other countries that have allowed or encouraged water markets and water rights trading, in varying degrees and circumstances, these markets have been a policy instrument within the larger context of water law and regulation. The Western U.S. is a good example. In Chile this order is reversed: water resources management takes place in an institutional context that has been shaped by and for water markets. The Chilean Water Code is so *laissez faire* that the overall legal and institutional framework has been built in the image of the free market, with strong private property rights, broad private economic freedoms, and weak government regulation. When we look at Chilean water markets, therefore, we are also looking at the Chilean model of water management in general, to a greater extent than in other countries. (Bear in mind that the design of the Chilean Water Code was determined by domestic political and economic factors within Chile, without reference to the international water policy debates that emerged a decade later.)

The Chilean model's results in practice have been both positive and negative. Chile's experience is uniquely valuable to help answer a question at the heart of international water policy debates: Is a free-market approach to recognizing water “as

an economic good” compatible with the broader and long-term goals of integrated water resources management (IWRM)? The Chilean case shows that the answer is “no.” In other publications I have analyzed the empirical results and their broader international lessons in detail (e.g., Bauer 2004, 2008). My summary here must be very brief.

The Chilean model has had two main economic benefits. First, the legal security of private property rights has encouraged private investment in water use, both for agriculture and for urban, industrial, and hydroelectric uses. Second, the freedom to buy and sell water rights has led to the reallocation of water to higher-value uses in certain areas and under certain circumstances. The key examples include the outskirts of Santiago, some valleys growing fruit and vegetables for export, and huge mining projects in the desert north. These are important benefits, even though the market incentives and price signals themselves have been only partly functional in practice, and they are the kind of results that advocates of market policies hope to deliver. This is what the Chilean model's proponents refer to as “managing water as an economic resource” (Briscoe et al. 1998).

These economic benefits, however, are directly linked to a legal and regulatory framework that has proven itself incapable of handling the complex problems of water governance. There is a lot of evidence in Chile confirming the serious problems posed by river basin management, water conflicts, coordination of multiple water uses, environmental protection, and social equity (since few of the Water Code's benefits have reached Chilean peasants and poor farmers). These more complex problems, of course, are precisely the fundamental challenges of IWRM and water sustainability. Moreover, the institutional framework has been rigid and resistant to change. After 1990, Chile's democratic government spent 15 frustrating years trying to moderate the Water Code's free-market emphasis, against strong political opposition, before finally settling for a minor legal reform in 2005 (Bauer 2008).

The strengths of the Chilean model, in other words, are bound to its weaknesses. The same strong legal and institutional features that have led to the model's success in some areas have effectively guaranteed its failure in others (as

summarized in the previous two paragraphs). The model's flaws are structural; they are integral parts of the same legal and institutional arrangements that underlie the water market. These flaws are not separable from the rest of the model, as argued by some of its international proponents (e.g., in the World Bank or Inter-American Development Bank). On the contrary, the flaws are the necessary institutional consequences of the Chilean military's free-market reforms of property rights and government regulation. The aspects of the model that privatize water rights so unconditionally and define them as freely tradable commodities are inextricably connected to the aspects that weaken and restrict the regulatory framework. (The critical and contradictory role of the Chilean courts is a topic I do not have space for here. See Bauer 1998 and 2004.) This is not a theoretical matter. In Chile the structural connections have been demonstrated in practice over the past 25 years, both by the mixed empirical results of the Water Code and by the long and difficult process of attempted Water Code reform.

Chile's experience shows the problems that can flow from implementing a free-market water law. The law's narrow economic approach has led to policies and institutional arrangements that cannot meet the challenges of integrated and sustainable water management—in particular, water governance and conflict resolution. To avoid such outcomes, international efforts to reform water policies must foster a broader and more interdisciplinary approach to water economics, with more legal, institutional, and political analysis of markets and economic instruments. From the perspective of institutional economics, legal rules and political decisions determine the nature of property rights, economic incentives, and market performance. My hope is that this analysis of the Chilean experience will help raise the level of international debate about IWRM.

Another way of putting this argument is to return to the familiar image of IWRM and sustainable development as a tripod, whose three legs are economic efficiency and growth, social equity, and environmental sustainability. (Economic efficiency and growth are not the same thing, of course, but they are often lumped together or treated interchangeably.) The Chilean model of

water management has a strong economic leg and weak social and environmental legs, making it unbalanced overall. The social and environmental legs cannot be strengthened without weakening the economic leg in ways that—at least in Chile—are extremely difficult in political and constitutional terms. Moreover, even the economic leg is weaker than it appears because the ineffective mechanisms for resolving conflicts and internalizing externalities also reduce economic efficiency and growth, especially over the long term. Because the Chilean approach to managing water as an economic good puts all the emphasis on water as a *private* good and tradable commodity, it is difficult to recognize or enforce the other aspects of water as a *public* good.

If other countries want to follow Chile's approach to water economics and markets, they will have to adopt a legal and institutional framework that is functionally equivalent to the Chilean model. Regardless of the specific and distinctive aspects of the Chilean case, any country that tries to follow the *laissez faire* economics of Chilean water law will necessarily confront similar institutional and political problems. How is it possible to create a legal and institutional framework that provides such strong guarantees for private property and economic freedom, and such wide scope for free trading of water rights and private decision-making about water use, without also severely restricting government regulation and legislative reform? If a country does not want to grant the judiciary such broad powers to review the actions of government agencies, how else can those agencies be prevented from interfering in water markets and property rights? If private economic rights are so strong and public regulation is so weak, through what institutional mechanisms other than the courts can conflicts be resolved effectively? How much room can there be for environmental protection in such a framework, and how can the level of that protection increase over time, given the strength of vested property rights?

If instead a country chooses a stronger regulatory framework or places more conditions on private rights, that country is, by definition, no longer following the Chilean economic approach. Hence one of the deeper lessons of the Chilean water model is to show how different economic

perspectives have different consequences for institutional design. The Chilean experience shows the lasting problems that result when a narrow economic perspective is combined with the political power to design legal institutions in the image of the free market.

The Counter Example of Mexico

Other Latin American countries have looked closely at the Chilean model of water markets, but none have replicated it. Mexico adopted a new national water law in 1992, which is more middle-of-the-road than the Chilean approach and reflects contemporary international debates about IWRM and sustainable development. The Mexican water law includes a combination of economic instruments (markets and pricing), government regulation, and public participation. Some aspects of the law are pro-market: water rights were re-defined to encourage market reallocation; government irrigation districts were transferred to organizations of private irrigators; and the property section of the national Constitution was revised to allow privatization of public and communal lands (*ejidos*), including water rights. These changes were made in the context of Mexico's entrance into the NAFTA with the U.S. and Canada, a move that triggered bitter political conflict within Mexico (Whiteford and Melville 2002). On the other hand, the new water law retained strong central government regulation, established river basin councils with broad stakeholder participation, and in general expressed a pragmatic and long-term view of how water rights reforms should be implemented in practice, including attention to the equity impacts on poor *campesinos* (Garduño 2005, Wilder 2008).

For proponents of the Chilean model, the Mexican approach has been disappointing because of the regulatory restrictions placed on market transactions. In that respect, water markets in Mexico show many similarities with those in the Western U.S. Most water transactions take place within established irrigation systems. There are local examples of cities acquiring agricultural water supplies, although often through political pressure rather than market prices. And finally, Mexico seems to be following the earlier U.S. path, with market transactions becoming gradually more

routine over time, while remaining subject to a host of political, social, and regulatory constraints.

Conclusions

Most readers of this journal would probably argue that there is little chance of the Western U.S. following the Chilean or Mexican examples. I agree, which is why I have tried to emphasize the more conceptual lessons about the relationship between economic theory and legal and political institutions. On the other hand, I think that the experience of U.S. politics and economic policies over the last 30 years ought to reduce our complacency about how such ideological extremes could not happen here.

Market approaches to water allocation in the future will be part of broader efforts to strengthen water governance and value long-term ecosystem services, if we can work through the basic political economy of who wins and who loses and who makes the rules.

End Notes

1. I am talking here about market approaches in the contemporary era of water policy and management, beginning in the mid 20th century, not the much longer history of local water transactions among farmers and other water users. Such transactions, whether formal or informal, have probably been common in all regions with a history of irrigation.
2. Kenney, in the paper I cited above, says: "To the outside observer looking in, the region offers a wealth of lessons – perhaps more negative than positive." (Kenney 2005: 167) See also Wescoat (2005) and Postel and Richter (2003) for similar commentary about the decline of U.S. leadership in water policy.
3. This section is adapted from Bauer (2004 and 2008).

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