

Local Control and Management of Our Water Commons

Stories of Rising to the Challenge



www.canadians.org



www.onthecommons.org/water

Lead author:

Dr. Adam Davidson-Harden, Assistant Professor, Global Studies, Wilfrid Laurier University

Contributing authors:

Susan Spronk, Postdoctoral Fellow, Cornell University

David McDonald, Associate Professor and Director, Department of Global Development Studies, Queen's University (Kingston, Ontario)

Karen Bakker, Associate Professor, Department of Geography and Director, Program on Water Governance, Institute for Resources, Environment and Sustainability, University of British Columbia

Notes and acknowledgements

While Adam Davidson-Harden co-ordinated and led the work of writing the report, the finished product is truly a team effort. The other contributing authors – Susan Spronk, David McDonald and Karen Bakker – each contributed “tools” to the report, and provided valuable feedback throughout the entire process. Anil Naidoo and Daniel Moss offered editing support and helped us chart a course that was true to the intentions and purpose of documenting practical tools to further the theory and practice of a global water justice movement. While the project has met with some challenges, it has been an illuminating, fascinating and rewarding experience for all of us. Most of all, we wish to thank and acknowledge the front-line activists and community workers who, on a daily basis, seek Commons solutions to the water crisis. We are indebted to their creativity and persistence in preserving and stewarding the precious, common resource of water for all times.

Adam Davidson-Harden

Table of Contents

Introduction: Many Paths, Common Goals

- Case 1:** The Push for a UN Covenant on the Right to Water
- Case 2:** Legal Efforts to Guarantee the “Right to Water” in Latin America
- Case 3:** The Constitutional Right to Water in South Africa
- Case 4:** Free Water in South Africa
- Case 5:** “Social Control” and Public-Collective Partnerships with Community-Run Systems in Cochabamba, Bolivia
- Case 6:** Small Farmers and the Indigenous Concept of ‘Uses and Customs’
- Case 7:** The Acequia System of Irrigation and Water Management
- Case 8:** Indigenous Peoples’ Struggles for Water in Ecuador: The case of Licto
- Case 9:** First Nations’ Struggle for Water: The cases of Black Mesa and St’át’imc peoples
- Case 10:** Public Management of water in Porto Alegre, Brazil
- Case 11:** Public-Public Partnerships in Water
- Case 12:** Employee Cooperatives in Water: The case of Dhaka WASA
- Case 13:** Retaking Public Control of a Large Water Utility: Yorkshire Water and Welsh Water
- Case 14:** Water Democracy in Action: Delegated (or shared) water governance partnerships
- Case 15:** Challenging the Myth of Public Penury: Alternative financing mechanisms
- Case 16:** MAMA-86 and Water in Ukraine
- Case 17:** Tarun Bharat Sangh and Common Water in Rajasthan
- Case 18:** “Common Assets Trusts” as a Political and Economic Project
- Case 19:** The Fight for Public Water in Felton, California
- Case 20:** A Trust Fund to Keep Water Clean, Safe and Affordable
- Case 21:** Establishing limits on groundwater withdrawals for the public good
- Conclusion:** Mapping Diverse Conceptions and Strategies for the Water Commons

Sources and Further Reading



Photo credit, Andy Lin

Introduction

Many Paths, Common Goals



Despite the reality of diminishing freshwater resources and supply, we
are promising this historic moment to forge a global water
movement. We've seen regional efforts for community-based water
management to reform our water Commons.

Water is a vital part of our lives, and it's essential for our health and well-being. We need to take action now to protect our water resources and ensure that everyone has access to clean, safe water. This is a global challenge that requires a collective effort from all of us. We must work together to address the growing water scarcity and pollution that threaten our planet's future. It's time to join the global water movement and make a difference. Let's work together to ensure that water remains a common good for all.

Recent decades have seen the uneven advance of publicly-financed water projects to promote the idea of water as a common good and trust, at least implicitly¹. Of course, these efforts are still marred by old and new patterns of economic exploitation and resource pillage both within and between nations. Nevertheless, what has been most hopeful is that to reverse crumbling public services and infrastructure, representative civil society organizations and innovative governments are expanding the effective stewardship and management of our Commons – whether it be air, soil, water, the internet or public health.

This agenda of public investment embodies at least a modest program of social policy reform focused on equality and universality of access (if not environmental sustainability), and is supported by the new discourse of human rights championed through the UN – crucially influenced by Global South states. The political rationale for expanding access to water through public projects rests on a basic argument: access to safe, clean water for sustenance, sanitation, and industry is good for everyone. More than 1.2 billion people lack access to safe drinking water, 2.6 billion lack access to safe water for sanitation, and more than 5 million still die early from preventable, water-borne illnesses in the South as well as in indigenous societies in the North². Benefits of access to water would truly flow throughout society at large, facilitating all aspects of human life: culture, environment, economy and industry.

The attempted corporate enclosure of the water Commons, whether commodifying water by bottling and selling it, the privatization of public water utilities, or by other means, brings into sharp relief the full scope of challenges the growing water justice movement faces. Such commodification of nature's gift is a challenge and a provocation. As this movement draws a line in the sand, we look to each other for support, for information, and more crucially, for positive alternatives. We need each other more and more, as we struggle to define our agenda for the water Commons, for equitable water access and for sustainable management.

As we seek to better understand what circumstances local alternatives for democratic, equitable and sustainable control of water Commons are working best, water justice activists in the North and South continue to rediscover the wealth of alternatives in the indigenous societies that so-called “modernization” has effectively neglected, excluded and degraded. We find ourselves marveling at the amazing diversity of culturally-specific economic and political traditions around water that both exist and are being created. These living experiments, present in both indigenous and non indigenous societies, help us redefine the meaning and practice of the water Commons and of water justice.

Toward exploring such positive solutions, this report draws together 21 “tools” or cases of local action that emphasize local control of the water Commons for equitable access and sustainability. This collection is by no means complete. In fact, this is the strength of the alternatives out there: there is a true wealth of them. These tools are meant to provoke discussion and dialogue, and to raise further questions and answers.

As a research team working on this report, we've put together a few questions following each tool that can hopefully act as a springboard for further discussion. We know, however, that you will add many of your own questions drawn from your own experience. The conclusion draws together some of the principal themes, criticisms and challenges that emerge from the tools.

For us as a research team, these alternatives to the world water crisis demonstrate the strength of a growing, solutions-oriented water justice movement and the power of the water Commons in joining us in common cause. Thank you for reflecting on this document and considering adding your own ideas. Through writing up and submitting your own case, you are in a position to contribute to the shape and direction of the water justice movement, to listen to each other's stories, share each other's challenges and celebrate each other's successes. We are honored to work with you in advancing the global water Commons.

¹ *Social movements were, and always have been, instrumental in pressing states in the struggle for such social reforms – including the demand for other common goods such as health care and education.* (Watkins, 2006). See also the main website for the 2006 Human Development Report for these quick facts: <http://hdr.undp.org/en/reports/global/hdr2006/>

Case 1

The Push for a UN Covenant on the Right to Water

Introduction

Human rights have been a powerful platform for advancing the agenda for social justice and ecological sustainability throughout the world. However, our best intentions and declarations are continually compromised by the lack of political will, grassroots power to force that will, and the underdeveloped capacity to enforce and realize the rights as described on paper. This is aggravated by the willingness of would-be water privatizers to co-opt the discourse of human rights for their own ends. Some have suggested that focusing on water as a human right is therefore in error, while others see it at least as a stepping stone to working toward access and sustainability for all.

The Friends of the Right to Water has worked hard in past years to advance the idea of a binding, new covenant enshrining water as a fundamental human right. Despite its challenges – including the compromise with corporations over voluntary statements of social and environmental standards in the Global Compact and the lack of a consistent means of enforcing and realizing human rights – the UN remains the sole international political organization with the capability to bring a new force of customary international law (deriving from custom and practice rather than written treaty law) – into being. Such mechanisms can, and have been integrated into national legal frameworks, though not consistently. The Friends of the Right to Water outline some key principles that could inform the construction of a new global covenant.

Key Principles

- Water is necessary for all life on earth.
- Water is a fundamental human right and requires States to be willing and able to implement their respective obligations to respect, protect and fulfill the right to adequate water and sanitation.
- As part of their obligations to fulfill the right to water, States have obligations to provide adequate, safe, accessible and affordable water and sanitation for all people within their jurisdiction who currently do not have such access, with preferential treatment and positive action for the poor and marginalised. States must ensure that is water allocated in a manner that prioritises people's basic needs and livelihoods.
- Water is a public trust and not a commodity and belongs to all humanity and the earth. As such, water should remain in the public domain.
- States have the responsibility to ensure the conservation of freshwater ecosystems, to prevent over-consumption of water, the degradation of water systems and to protect of watersheds.
- Sufficient clean water is necessary to protect ecosystems and other species. Healthy ecosystems will ensure the human right to water for future generations.
- States have obligations to guarantee the human rights principles of participation and transparency, including that water services must be under democratic public control, in which members of the public fully participate in decisions on water management and the allocation of water resources.
- Water resources contained completely within a State's boundaries are considered part of the national patrimony and should never be subject to foreign exploitation.

Questions

What are some weaknesses and strengths of going the “UN route” of declaring water a human right?

What is the synergy between fighting for the human right to water and gaining recognition of water as a part of the Commons?

Notes and links

www.blueplanetproject.net

See the World Bank's book on the human right to water: <http://lnweb18.worldbank.org/EXT/epic.nsf/ImportDocs/8525729D0055F87B852572F00054DB08?opendocument>

www.unglobalcompact.org



Case 2

Legal Efforts to Guarantee the “Right to Water” in Latin America

Introduction

In the wave of privatization in the 1990s, multinational water companies concentrated their investments in the most urbanized continents of the global South – Latin America and East Asia – where the population is relatively affluent and economies of scale are possible. Privatization sparked immediate controversy as public dissatisfaction swelled against insufficient and inequitable water services. While a diverse set of social movements to defend water Commons have emerged throughout the world, these movements have gained particular urgency, strength, and focus in Latin America, a continent characterized by strong traditions of anti-imperialism and economic nationalism. Social movement efforts have included constitutional initiatives to enshrine the “right to water.”

One of the most famous victories of the growing upsurge in securing the right to water occurred in Uruguay where groups successfully organized a national referendum on water rights. In 2002, the Uruguayan government signed a letter of agreement with the International Monetary Fund (IMF) in which the government promised to privatize public water services. Two concession contracts were signed in the province of Maldonado, transferring control over two public water utilities to Aguas del Costa (a subsidiary of the French multinational Suez) and Uragua (a subsidiary of the Spanish multinational Aguas del Bilbao). In response, in 2004 a citizens’ campaign coordinated by the National Commission in Defense of Water and Life, forced the government to adopt a constitutional amendment that declares water access a human right and guarantees that management would remain in the hands of the state. It was an important social movement victory and the first time that the right to the environment was enshrined as a constitutional right. Similar amendment efforts on the right to water have now emerged in Bolivia, Colombia, Ecuador, El Salvador, and Mexico.

While the initiatives to guarantee the legal “right to water” may provide a tool for social movement activists to make claims in national courts, the tool is weakened by lack of enforcement mechanisms. In Uruguay, for example, less than a year after the constitutional amendment was approved, the Tabaré Vázquez government produced an executive resolution stating that the private companies that signed concession contracts before the referendum would be allowed to continue their contracts. As Carlos Santos and Sebastián Valdomir argue, the Uruguayan government refused to follow through on the popular demand for fear that the companies would retaliate by bringing lawsuits against the government in international court. The companies’ investments are protected by bilateral investment treaties (BITs) that are backed by powerful means of enforcement through investor-state arbitration. As legal scholar Gus Van Harten describes, the international system of investor protection provided by BITs “goes well beyond other international regimes that permit individualized access to international governing institutions,” such as international human rights law and humanitarian law. In other words, while the right to water may be guaranteed in “soft” law, it is easily trumped by international treaties that seek to protect investors’ rights.

Given the limitations of right to water initiatives, there is a growing sentiment that legal instruments alone are rather blunt tools to fight water privatization initiatives, and that social movements might also benefit by advancing the notion of “the Commons.” As Bolivian legal scholar Rocio Bustamante explains, “The basic idea is to rethink the concept of rights in relation to the management of natural resources such as water, which will allow for a more creative relationship with nature because natural resources are there for all of us to share, including non-human beings. We must start with the principle of solidarity, which transcends the idea of a ‘right.’ A ‘right’ always implies that we identify who is entitled to a given ‘right’, who is supposed to guarantee it, and who has legal standing. By contrast, if natural resources are thought of as a “Commons,” they do not belong to anyone in particular.” This lack of definition of ownership can be problematic – witness Garret Hardin’s *Tragedy of the Commons* – and its frequent misuse to claim that the commons concept is fatally flawed. Overlooked is how the Commons concept can aid in unleashing the creativity of public and civil society institutions in sustainably stewarding our precious, life-giving resources.

Questions

Do water justice movements need to choose between the language of “the Commons” or human rights?

How do we make sure that corporations and the wealthy do not compromise the spirit of laws promoting the right to water?

Notes and links

See Bustamente's 2007 article *Debemos comenzar a cuestionar la idea del derecho al agua* at www.pieb.com.bo/noticia.php?idn=2055.

See also the following articles:

Bakker, K. (2007), *The “Commons” Versus the ‘Commodity’: Alter-globalization, Anti-privatization and the Human Right to Water in the Global South*, *Antipode* 39(3): 430-455.

Santos, C. and S. Valdomir (2006), *Uruguay: la democracia directa en la defensa del derecho al agua. Movimientos sociales y luchas por el derecho humano al agua en América Latina*. ILSA. Bogotá, Colombia, Instituto Latinoamericano de Servicios Legales Alternativos. 34: 171-179.

Van Harten, G. (2005). *Private authority and transnational governance: the contours of the international system of investor protection*, *Review of International Political Economy* 12(4): 600-623.

Uruguay's National Commission in Defense of Water and Life: www.evb.ch/cm_data/Comision_Nacional_Defensa_Agua_EN_edited_.pdf



Photo credit, Andy Lin

Case 3

The Constitutional Right to Water in South Africa

Introduction

National water rights embedded in constitutional law offer hope for a systematic approach to working toward equal and sustainable water access. In the case of South Africa, is the law living up to its ambitions?

Alongside the right to sufficient food, health care services and social security, the South African Constitution includes the right to access “sufficient water.” The duty to respect these rights is both negative and positive in nature. On one hand, the state must refrain from unjustifiably interfering with the enjoyment of the right, including:

- any practice or activity that denies or limits equal access to adequate water;
- unlawfully diminishing or polluting water;
- limiting access to, or destroying, water services and infrastructure as a punitive measure;
- arbitrary or unjustified disconnection or exclusion from water services or facilities;
- discriminatory or unaffordable increases in the price of water; or
- pollution and diminution of water resources affecting human health.

On the other hand, the rights are positive in the sense that there are duties to protect, promote and fulfil them, requiring the state to take “reasonable legislative and other measures, within its available resources, to achieve the progressive realisation” of the right (Section 27(2) of the SA Constitution.) The recognition of the right, in turn, imposes certain duties on both state and non-state actors that can be enforced by courts, as was the case in the landmark ruling in *Government of the Republic of South Africa v Grootboom* (2000), where the Constitutional Court held that positive social and economic rights obligations are enforceable. The Court explained that in challenging the failure of the state to take sufficient positive measures “the real question will be whether the legislative and other measures taken by the state are reasonable.”

It is the “reasonableness” clause that is most critical here, including the roles and capacities of different spheres of government as well as the resources required to ensure that water rights can be met. For the most part, this reasonableness clause has been used to justify limited rights to water, as well as to uphold legislation that requires water to be “cost reflexive,” which in effect facilitates private sector involvement in water services and allows for service disconnections for non-payment. Any provision of “rights” perceived by the Courts to undermine South Africa’s macro-economic strategies of international competitiveness, or forcing lower tiers of government to institute rate increases above a legislative ceiling, are considered “unreasonable.”

At the same time, the Constitution and other legislation have been used to defend the introduction of prepaid water meters in low-income areas, with the South African state arguing that prepaid water meters are “pro-poor,” and allow households to better budget their water spending, and the state to better manage its revenue flows to invest in extending water services to un(der)served areas. Similarly, water cut-offs are deemed constitutionally sound because the non-payment of service bills negatively affects the rights of others to water.

Access to water in South Africa is therefore enhanced by constitutional rights, but by no means guaranteed, as other legislative and macro-economic demands shape what is considered “reasonable.”

Questions

What kinds of institutions or legal mechanisms are necessary to help ensure the realization of equal access to water enshrined in a national constitution?

How can citizens be supported in their efforts to bring grievances before governments that fail to live up to the spirit of laws aimed at ensuring water access and sustainability?

Notes and links

See the *Water Dialogues* website for South Africa: www.waterdialogues.org/country-03.html,

A background paper for the 2006 UNDP Human Development Report on water: http://hdr.undp.org/en/reports/global/hdr2006/papers/muller_arnold.pdf, and the *Municipal Services Project*: <http://www.queensu.ca/msp/>



Case 4

Free Water in South Africa

Introduction

The idea of providing a free “lifeline supply” of water to poorer households is compelling, as it incorporates the theory of wealthier water users cross-subsidizing basic use for the poor. However, in South Africa the restrictive definition of a lifeline supply has meant a slip back into the status quo of maintaining inequality. Compounded with the problem of prepaid water meters and other limitation devices, poorer South Africans continue to struggle.

In the lead-up to local government elections in South Africa in 2000, the national government announced there would be a policy of “free basic water” in South Africa, beginning in 2001, to be delivered by municipal authorities and funded, in part, by the national government. The amount allocated was 6kl (6,000 litres) per household per month, based on a calculation of 25 litres per person per day for a household of eight.

As most municipalities were unprepared for this policy (and not consulted) it took several years for it to be widely implemented, with some municipalities today still offering only partial free water. There are also millions of people without access to any water whatsoever who are unable to benefit from the policy, or who use communal taps, which make the allocation of free water difficult.

The free water policy is part of a larger restructuring of water tariffs in South Africa, ostensibly designed to make water pricing more “progressive.” In effect, the free allocation of water is the first price “block,” with consumption after 6kl/month being charged on a rising block tariff basis. As indicated in the chart below, the stepped tariff structure is free for the first block and rises for set blocks of consumption after that, with higher-end pricing blocks intended to subsidize “free” water, while at the same time acting as a disincentive to over-consumption. (Line A indicates the marginal costs of production.)

In theory, all households receive a free lifeline supply of water, subsidized by rising tariff blocks that penalize wealthier households and act as a demand management tool. In practice, the volume of free water has proved inadequate for most low-income households, forcing them into the second or third block of consumption, often creating higher water bills than these households were charged prior to the introduction of “free” water. This is due in part to the steep rise in tariffs in the second and third block. In some cases, households that consume one drop more than 6kl are also charged for the free block. Households that are unable to afford these payments are effectively forced to cap their consumption at 6kl.

For the most part, the allocation of free water has been universal – largely on the assumption that the cost of means testing would outweigh the savings – but in some municipalities indigent policies have been introduced, leading to divisive social and political decisions over which households are “poor enough” to receive free water.

In cases where households consume more than the free allocation of water, but are not paying for the amounts used above that threshold, municipalities have been introducing devices that stop the flow of water at 6kl, limit the water flow rate to make it impossible to use more than 6kl per month, or simply cut off the water supply altogether.

Because of the political fallout associated with cut-offs and limitation devices, many municipalities have been introducing prepaid water meters that will provide the free allocation of water but stop at this amount if water has not been pre-purchased, effectively offloading the act of disconnection to the household itself.

In conclusion, while free water hints at the Commons by providing many households in South Africa with a lifeline supply of water, it must be seen as part of a larger package of water commodification, including the introduction of harsh systems of cost recovery and enforcement that still tend to benefit upper-income households and industry at the expense of low-income households.

Questions

What forms of participatory consultation and management can ensure that “progressive” water pricing schemes are actually progressive?

Should water justice embrace forms of cost recovery? If so, how can we use cross-subsidization to tax the largest users, avoid further excluding the poor, and avoid reinforcing elite and corporate advantages?

How do we fight the water commodification so that water is not seen as simply one more product to be bought and sold?

How do we guarantee nature her fair share for ecosystem survival?

Notes and links

See Dale McKinley's *The Struggle Against Water Privatization in South Africa*: www.tni.org/books/watersafrica.pdf, and Patrick Bond's *Reclaiming Water Prices for Participatory Public Services*: www.waterjustice.org/uploads/attachments/pdf68.pdf



Photo credit, Daniel Moss

Case 5

“Social Control” and Public-Collective Partnerships with Community-Run Systems in Cochabamba, Bolivia

Introduction

In April 2000, thousands of citizens of Cochabamba – Bolivia’s third largest city – blocked roads to protest the privatization of the city’s local water system, rallying around the central battle cry, “Water is life!” The government cancelled the concession contract and returned water to municipal control under the watchful eye of the Coordinadora for the Defense of Water and Life, the social movement organization that emerged to coordinate the protests. Community leaders set about the task of elaborating a new way to provide water services that would build upon the experiences with non-hierarchical forms of decision-making that emerged during what was often described as a “Water War.” One thing was clear: while privatization was not the answer, no one wanted to return to the former model of “public” utility, which was widely considered to be inefficient and corrupt.

Based on experiences with previous episodes of nationalization in Bolivian history, water justice activists in Bolivia insist that public (read: state) forms of management are not a true alternative to privatization because they simply replace one form of hierarchical management with another. Instead, the opposite of privatization is the “social re-appropriation of wealth,” which entails the collectivization of property and the self-organization of water users. As Oscar Olivera, a spokesperson from the Coalition in Defense of Water and Life, known as La Coordinadora explains, this difference between water justice activists in Bolivia and elsewhere is crucial: “Activists in the North tend to focus on issues related to management, while we (in Bolivia) are primarily concerned with the struggle for property rights.”

The notions of collective property that have emerged in the struggle for water are inspired by the experiences with communal water management of two key participants in the Cochabamba “Water War”: small irrigating farmers’ associations (see section on “uses and customs”), and community-run water systems. Utterly neglected by state authorities and lacking basic services, most of the communities in the poor barrios of the southern zone of the city of Cochabamba have built their own independent water systems provisioned by wells that are managed by independent cooperatives, informal committees, or neighbourhood councils elected by the residents. Since 2004, many of these community-run water systems have been organized in the Association of Community Water Systems of the South (ASICA-Sur), which has given a collective voice to the citizens who lack public water services. More recently, ASICA-Sur has secured financing from the European Union to build independent water systems in Districts 7 and 14. These independent systems will buy water in bulk from the public water company, but will be managed by the users. As the President of ASICA-Sur, Abraham Grendyier explains, it has taken the public water company too long to respond to their demands so they have decided to take matters into their own hands. While the construction of independent water systems risks further fracturing the urban water network, in the long term it may be the only way to meet the goal of “water for all.”

Demands for communal ownership and management have also translated into the demand for “social control” within the re-municipalized water company, SEMAPA. While former boards of directors were staffed exclusively by professionals and politicians, between April 2002 and October 2005, three members of the seven-member board have been elected from the macro-districts of the city. Many of the problems that have historically plagued the public utility, however, have remained unresolved by the limited degree of social control. While the public water company has performed better than would have been expected under private control, coverage rates remain low (46 percent in 2005), and services are intermittent. Opinion is divided on the reasons for the perceived failure of social control to improve the utility’s performance. For some, it is the fact that the mayor controls the budget. Others highlight the lack of capacity of the citizen directors, the over-politicization of the public utility, or the problem of corruption. Yet others blame the conditions attached to a loan by the Inter-American Development Bank that have stymied attempts to democratize the utility because they prioritized administrative

reform and repairs to the existing network instead of making visible improvements to water services. Nearly all agree, however, that Cochabamba's water problems are linked to the lack of public investment. Efforts to outline alternatives and debate the future of the local water company continue.

Questions

If a central problem for SEMAPA today is financing, what kinds of solutions to this problem can we imagine and implement?

What are some alternatives to loans from international financial institutions, whose conditions continue to frustrate progress?

If the concept of “the Commons” is linked to democracy, how do we define “democratic management” in the context of a public water utility?

Notes and links

Democracy Center: www.democracyctr.org/index.php

Agua Tuya, a collaboration between SEMAPA, community-based water committees, and NGOs:

www.aguatuya.com/html/water_for_all.html

On Bolivia's water wars, see www.upsidedownworld.org/main/content/view/1255/31/



¹ Interview with Susan Spronk, Cochabamba, February 26, 2008.

² Interview with Susan Spronk, Cochabamba, February 29, 2008.

Case 6

Small Farmers and the Indigenous Concept of “Uses and Customs”

Introduction

The concept of “uses and customs” is used broadly to describe indigenous governance systems. In this case, it refers to the traditional water rights and practices of indigenous Quechua-speaking communities in the Andes, although the concept is most developed in the Cochabamba Valley of Bolivia. In the Cochabamba Valley, agricultural production is dependent on irrigation, a technology introduced by the Inca in the fertile valleys in the Andes more than five hundred years ago. In these communities, water resources are managed collectively by associations of small farmers. Local leaders known as the *jueces de agua* (water judges) distribute water to each household in rotation based upon various criteria, including the contribution of labour services to the community and participation in the organization

In Bolivia, the notion of “uses and customs” became politicized under the threat of privatization. One of the reasons that water privatization in Cochabamba sparked a “water war” was because of the previous resistance of small farmers’ organizations dependent on irrigation who perceived that the monopoly provisions of the water privatization law passed by the Bolivian government (law 2066) threatened their traditional water rights. A few years before the law was passed, these associations had formed the powerful Federation of Small Farmers and Community Systems of Potable Water of Cochabamba (FEDECOR). Thousands of members of the FEDECOR joined the urban protests demanding the modification of the new water law to recognize their “uses and customs.”

In October 2004, the Bolivian government approved a new irrigation law (Law 2878), which was written with the participation of the FEDECOR. This innovative law grants indigenous communities, small farmers, and landholders the right to continue with their “customary uses” of the water sources (wells, dams, rivers and rainwater), protecting them from future assault by transnational corporations and private businesses. It prohibits the commercialization of water resources through the creation of markets of water rights (as occurred in Chile); recognizes the traditional collective rights of small farmers and their family members to water sources (not in terms of property rights, but right of access); and organizes the rural water sector on the basis of traditional territorial boundaries. Importantly, the law also created a new water authority called the National Irrigation Service (Servicio Nacional de Riego – SENAR) that includes participation and oversight by small farmers and major small farmer organizations.

The regulations that put the law into practice were passed by the Morales government in October 2006. Researchers are currently developing procedures to identify and register legal claims to water. By using state-of-the-art geographic information systems (GIS) and anthropological surveys, the Ministry is establishing a common database that will create a registry of traditional water rights, which will help eliminate future conflicts over water and guarantee that indigenous peoples, peasants and small farmers can exercise their ancestral claim to use the resource.

The new law has not been immune to criticism. As researchers Nancy Yañez and Susan Poats argue, “the concept of ‘equality’ upon which the communal system of water rights is based does not mean ‘equal.’” Decisions about which family gets how much water and when are subject to highly political and subjective criteria. Concerns have also been raised that the creation of a water registry will enshrine the rights of relatively privileged communities that already have access to water, and that the poorer communities will be excluded from the system on the basis of “uses and customs.” The example of “uses and customs” therefore represents some of the complicated social power dynamics related to definitions of community and communal control.

Questions

How can we ensure that forms of “community control” are democratic to the fullest extent, and do not reinforce or worsen existing inequalities?

What role can northern partners in water justice have in overcoming the potential pitfalls raised in the first question? Is there a role?

Notes and Links

See Yañez and Poats’s article *Derechos de agua y gestion ciudadana* (Spanish only), at www.idrc.ca/uploads/user-S/11976606153Libro_3_Derechos_de_agua_y_gestion_ciudadana_Nancy_Yanez_Susan_Poats_Junio_2007.pdf and Elena Villarroel and Carmen Peredo *The Struggle for Water as a Common Good: The Experience of Andean Communities in Bolivia* at www.indiana.edu/~iascp/bali/papers/Villarroel_Elena.pdf



Case 7

The Acequia System of Irrigation and Water Management

Introduction

Indigenous practices of water management are rooted in centuries, if not millennia, of shared and preserved knowledge and culture adapted to specific climatic conditions. Often, such systems reflect completely different notions of water than those reflected in northern cultures with capitalist economies.

Across the Andean region of South America and stretching up through central America into the American Southwest, the system of community control and management of irrigation systems known as the “acequia” has been in place for hundreds of years, originally imported from Spain, where it was in turn adapted from Africa and the Middle East, with origins thought to be in ancient Iberian and Roman practices. As a system of collective control and responsibility for irrigation systems in dryland and desert regions, the *acequia* has been adapted for use by indigenous communities, and offers an example of an existing form of community management of water resources for farming and sustenance.

Acequia systems involve carefully constructed rights and responsibilities for those who are part of the common property management system involving all aspects of diversion, allocation, and use as well as re-use/recharging of water resources (Brown & Rivera, 2000). Rutgerd Boelens offers that in the Andean region, the idea of water rights goes well beyond defined terms of access and use, to capturing the right to democratic control over the management of water resources (Boelens, 2006). In the Andes, for instance, indigenous peoples use collectively controlled irrigation systems as a base for their dominant role in agricultural production for national food security needs – at the same time as they are consistently the most marginalized and impoverished members of Andean societies. In this context, across the various contexts where such irrigation systems exist, indigenous peoples’ rights to control water for the public good are consistently under threat by other legal imperatives for water that do not respect its sustainable use or indigenous cultural autonomy and legal systems.

In New Mexico, where state law enshrines *acequia* systems and users’ rights as a priority based on the principle of “first in time, first in use,” unresolved cases of state water rights have brought tensions between settler development and indigenous water rights to the fore. Spanish-language farmers have faced barriers to addressing grievances because of the dominance of an English language legal system through which they must press their cases, as well as their social marginalization and exclusion, a trend documented by legal services workers in the region (Meinzen-Dick & Pradhan, 2005).

Acequia Associations in New Mexico are under further strain, reflected in recent cases pitting one legal tradition against a state and national legal tradition. A 2003 state law gives Acequia Associations in New Mexico the right to deny requests from members to transfer water. In a case brought before a district court in September 2007, two separate plaintiffs’ lawyers argued that this state law violates the U.S. constitution, in the hopes of striking down the law and forcing Acequia Associations to violate their own rules by not being able to halt water transfers from irrigation ditches under their control. One of the cases involves a plaintiff’s desire to divert water for a new housing subdivision near Española. In the other case, 49 members of the local Acequia Association overseeing the Acequia del Gavilan decided against the water transfer, supported only by one member, the actual plaintiff, who is now seeking to overturn the association’s authority in court. The plaintiff, who would prefer that a state engineer be given the authority to decide on water transfers rather than the Acequia Associations, argue that water is subject to property rights as set out in the constitution. Paula Garcia of the New Mexico Acequia Association observed that the viability of the associations’ ability to protect their water rights was at stake in the deliberations over the 2003 legislation.

In this sense, one principal dilemma affecting still-operational *acequia* irrigation systems across Latin America and the American southwest is the continuing tension between contemporary forms of individual private property rights and their conception of water rights, and the more ancient forms of common property rights embodied in the community control model of the *acequias*.

Questions

Should water be thought of as common property or private property? What's the difference?

How can local alternatives address the issue of unequal water rights – whether between individual users, or among individual users, government agencies and corporations?

Notes and Links

Beyond the references cited, see the *Acequia Institute* (concerned primarily with the American southwest): www.acequiainstitute.org/, as well as the website for the *Water Law and Indigenous Rights* program: www.eclac.org/DRNI/proyectos/walir/. For an excellent and detailed article also covering New Mexican *acequia* traditions specifically, see John Brown and José A. Rivera's *Acequias de Común: The Tension between Collective Action and Private Property Rights* available at <http://dlc.dlib.indiana.edu/archive/00000227/00/rivieraj041300.pdf>. See also the *New Mexico Acequia Association* at www.lasacequias.org



Case 8

Indigenous Peoples' Struggles for Water in Ecuador: The case of Licto

Introduction

Entrenched inequality and marginalization impacts indigenous peoples across the world. In Ecuador, as elsewhere, this inequality is racialized. Local indigenous peoples have struggled to define and take control of water resources for irrigation in this context.

Rutgerd Boelens raises the case of Licto, a zone in the Andean Chimborazo province in Ecuador, to illustrate the power that indigenous communities can have when working in solidarity to develop their own priorities and systems for management of water for irrigation. Licto has a population of approximately 13,000, of whom 90 per cent are indigenous, represented in 28 rural communities, with more privileged white and mestizo (mixed race) groups heavily represented in the actual town of Licto. Boelens characterizes the history of social and power relations between white and mestizo power groupings and the surrounding indigenous communities as based on exploitive trade relationships, expropriation of land and discrimination (Boelens, 2002). Women do most of the work of irrigation in ecologically challenging contexts of steep, eroding slopes in the “minifundio” or smaller plots, to live through subsistence and local trade.

In 1989 the Corporation of Peasant Organisations of Licto (CODOCAL) was invited to participate in an “integrated rural development” plan for irrigation in the area overseen by the Ecuadorian Institute of Water Resources (INERHI). In response, the poorest elements of society in the rural indigenous communities decided to decline the invitation and to construct their own futures in terms of water management. On the government side, INERHI offered a technocratic and top-down plan for irrigation works in the region that split responsibility for implementation of the plan between CODOCAL and an NGO, the Ecuadorian Agricultural Services Agency (CESA).

The initial technical plan offered by the government reinforced the unequal rights enjoyed by the wealthy in Licto, however. It also ignored the valid concerns of women – the principal workers in irrigation – by setting out plans for irrigation work to be done at night, when indigenous women are more vulnerable to persistent sexual violence. Continuing an already unequal system, INERHI’s plan would result in those owning more land benefitting disproportionately from a share of greater investment and more water rights. The plan also included a single fee for water service that did not respect existing indigenous systems of users’ rules for water access, based on the labour of users and their participation in organizations dedicated to irrigation and water management.

As a response, CODOCAL pushed for creating an irrigation governing body (the Irrigation Directorate) that would represent the interests of rural indigenous communities, and that eventually attracted solidarity from the poorer residents of the town of Licto itself. Despite resistance from the government to CODOCAL’s counter-proposal, the Irrigation Directorate forged legitimacy for itself as a body representing the poor and marginalized in their efforts to secure the right to manage their own water for irrigation. CODOCAL has worked effectively to dictate the terms of indigenous participation in irrigation management, including structures for participatory management and defined responsibilities for users’ labour and maintenance contributions, as well as sustainable water use for the indigenous and poor.

Boelens comments that “in Licto . . . [the indigenous irrigation management strategy] constitutes a basic instrument for communities to challenge State power and management in the system, and also constitutes the keystone of the peasant and indigenous organisation in its drive to break free from their historical domination by the town’s white and mestizo families.”

Questions

How can we build into public water projects attentiveness to inequalities and injustice stemming from gender, economic position and race/ethnicity?

How can collective water management projects work to foster inter-cultural, gender and class solidarity?

Are notions of the Commons inherently culture-specific or geography-specific? How might notions of the Commons stemming from contexts like rural, indigenous communities in the Andes be applied in urban contexts in advanced industrialized countries?

Notes and links

See the website of the *Water Law and Indigenous Rights project*, <http://www.eclac.org/DRNI/proyectos/walir/>, and Boelens' 2005 article on Licto's indigenous irrigation projects, <http://www.iapad.org/publications/ppgis/BoelensLicto3DWaterRights.pdf>, as well as Boelens' and Hoogendam's book *Water Rights and Empowerment* (Assen: Van Gorcum, 2000).



Case 9

First Nations' Struggle for Water: The cases of Black Mesa and St'át'imc peoples

Introduction

First Nations/Aboriginal cultures worldwide face multiple challenges in the struggle to develop their own plans for water management. Often conflicting conceptions and systems of “development” are at issue, and settler states neglect or overrule indigenous cultures’ rights and autonomy.

Two examples from Turtle Island (or North America, to settlers) illustrate well the attempt of First Nations/Aboriginal Peoples to take control of water management in the face of state and corporate exploitation of water. Within the U.S. state of California, Navajo and Hopi First Nations have waged a struggle to stop Peabody Energy Corporation from abusing water resources by using them in coal operations in their homeland of Black Mesa. At issue are unsustainable withdrawals, from principal aquifers dating back to the Ice Age, which amounted to 3.3 million litres per day by Peabody from 1970 to 2005. In addition, ill-advised engineering decisions undertaken by state authorities led to the draining and dumping of uranium-laced water from one aquifer into another main aquifer used for drinking water. Though withdrawals from the company were halted in 2005, the company has repeatedly attempted to gain authority to restart its operations, and while the Black Mesa Trust – an organization representing the interests of First Nations and ecological sustainability – continues its work, it is under continual threat of a return to the previous status quo. To those active in the Trust, the right of First Nations to control their own water is seen as a sacred trust of their people and culture.

In St'át'imc land within the Canadian province of British Columbia, meanwhile, the chiefs' council is working towards the implementation of a broad-based land and water management plan based on ecological sustainability. The nation's principal way of doing this is by declaring all of their territory a “cultural protection zone.” Using a blend of Western science and indigenous knowledge and traditions, the St'át'imc people are attempting to develop an integrated system of ecosystem protection that values the full diversity of life and the land, looking at key “indicator species” in the grizzly bear, ungulates and fish, with the intention of protecting vital watersheds and rivers.

The government of British Columbia, however, has continually refused to sit with the St'át'imc and honour their plans for management of the land and water, due to its fear of further dampening growth of an embattled forestry sector. Currently, it is not necessary to get permission from the community to build (read: exploit water and forests) on Aboriginal land.

Therefore, water and land use licences continue to be “snapped up” by private interests, often without even the condition of a provincial environmental impact assessment. This situation mirrors the problems facing First Nations in Alberta who seek to challenge and resist unrestrained growth in the tar sands oil projects, which pose grave risks due to massive exploitation of water and river basins in northern Alberta (one unit of oil produced in this way requires three units of water).

Questions

Given the imbalance of power, how might multi-sectoral and international solidarity reinforce the quest for real self-governance and self-determination for indigenous communities?

Should we incorporate a fundamental concern for other forms of life into local alternatives for water? If so, how?

Notes and links

Website of the Black Mesa Trust: <http://www.blackmesatrust.org/>

Website of the St'át'imc: <http://www.statimc.net/>.

For the impact of the tar sands development, see the Tar Sands Watch site of the Polaris Institute, <http://www.tarsandswatch.org/tags/water-depletion>, and the Pembina Institute's Oil Sands Watch site: <http://www.oilsandswatch.org/>



Photo credit, Andy Lin

Case 10

Public Management of Water in Porto Alegre, Brazil

Introduction

Porto Alegre has served as an inspiration to the world in many ways, both as a workshop for participatory democracy and as home of the first World Social Forums. Its public water utility offers an innovative and successful example of participatory management, which, though challenged by inadequate access to financing beyond its tariff structure, continues to perform well.

In Porto Alegre, Brazil, one of the most famous, long-standing and successful public municipal water utilities continues to flourish and overcome obstacles. The Municipal Department of Water and Sewerage (DMAE) rests upon an integral deliberative council that enables citizens to exert influence and participate in the functioning of their own public water system, including a “social audit” process involving citizen oversight and participation in budgeting for actual water works. The system features a participatory budgeting mechanism, whereby 16 regions are consulted, votes are taken and input is gathered concerning areas for improvement and expansion. These ideas are studied for feasibility before being integrated into the following year’s budget. Some services and procedures are also contracted out to the private sector.

Hélio Maltz observes that before 1989 DMAE serviced mainly the downtown and affluent areas of the city, but with the advent of deepened participatory governance and budgeting structures, major expansions and service improvements have resulted. With an 8.5 per cent growth in population from 1994 to 2004, DMAE oversaw the expansion of household connections by a rate of 23 per cent during the same period, along with a 40 per cent increase in sanitary sewage collection services to households. Water-borne illnesses have substantially decreased in the city as a result, making Porto Alegre resistant to recent country-wide epidemics of cholera.

While over 99 per cent of citizens receive treated water for drinking, sanitation and sewerage require far more investment. Existing sewage treatment service covers only 27 per cent of total volume. It is clear that access to long-term financing is crucial in order to supplement the utility’s own self-sufficiency in financing (the World Development Movement points out that whereas an incredible \$27 million was invested by DMAE itself in maintenance and expansion, an estimated \$200 million would be necessary to invest in proper expansion of sewage treatment). Maltz found that while the Inter-American Development Bank successfully pressed for the privatization of other Brazilian cities’ public water utilities, DMAE’s persistence has managed to buck this trend. When a law in 2000 aimed to reinforce the privatization of water, DMAE acted as a hub for alternatives and resistance.

A powerful mechanism in DMAE’s toolbox is that of “cross-subsidization” in tariffs for water. Lower-income citizens are entitled to ten cubic metres of water per month but pay for only four, while tariffs rise steeply for those who use between 20 and 1000 cubic metres per month. This “social tariff” translates into a system whereby the wealthy help to subsidize the utility’s re-investment of tariff monies into improvements in the system itself: such improvements are 70 per cent financed through tariffs on usage. DMAE has also worked to expand educational opportunities for its employees.

Questions

How can democracy and participatory management be strengthened in public water utilities in the North as well as the South?

Should public water utilities “contract out” services to private companies?

How can public utilities make adequate investment in infrastructure without having to resort to privatization?

Notes and links

See Maltz's chapter in Reclaiming Public Water, entitled "Porto Alegre's water: Public and for all." See also the chapter on Brazil in the World Development Movement's Going Public: Southern solutions to the global water crisis.



Case 11

Public-Public Partnerships in Water

Introduction

A public-public partnership (PUP) is a twinning arrangement, with a stated non-profit motive, that aims to improve public water services in one or more of the partner regions. By definition, PUPs can include only public partners (though this has been challenged of late with the introduction of “Water Operator Partnerships,” as discussed below). The PUP concept officially emerged as a potential alternative to public-private partnerships (P3s) in water around 2000, though the idea of inter-public collaboration has a much longer history. Interest in water PUPs has since grown significantly, chiefly as a result of research by Public Services International Research Unit (PSIRU).

A public-public partnership (PUP) is a twinning arrangement, with a stated non-profit motive, that aims to improve public water services in one or more of the partner regions. By definition, PUPs can include only public partners (though this has been challenged of late with the introduction of “Water Operator Partnerships,” as discussed below). The PUP concept officially emerged as a potential alternative to public-private partnerships (P3s) in water around 2000, though the idea of inter-public collaboration has a much longer history. Interest in water PUPs has since grown significantly, chiefly as a result of research by Public Services International Research Unit (PSIRU).

PUPs can be typologized according to partnership arrangement. In brief, PUP actors are termed “public,” but that simply means they are non-profit and not from the private sector. A PUP does not have to be between government-run public authorities, such as two municipal water utilities; it can also include community-based organizations (CBOs), public sector trade unions and non-governmental organizations (NGOs).

The second way to typologize PUPs is according to objectives. Partners link up to achieve a wide variety of aims; these are grouped into a few broad goals in the following table.

Typology of PUP Objectives

Broad Goals	Specific Objectives
Infrastructure goals	<ul style="list-style-type: none">• expand water infrastructure• make services more efficient and equitable• develop knowledge and confidence among municipal workers
Capacity goals	<ul style="list-style-type: none">• improve administrative systems• improve social tariff setting
Financial goals	<ul style="list-style-type: none">• develop alternative financing mechanisms• empower the public operator and protect against privatization
Political goals	<ul style="list-style-type: none">• make public services more democratic

The sheer variety of partnership arrangements and objectives can make PUPs a flexible and powerful alternative to privatization. The partnering of public operators can enable knowledge-sharing that builds technical expertise and in turn improves the quality and efficiency of service. South-South PUPs can help increase infrastructure expansion into unserved areas by matching municipalities that have solved this challenge with those that are still struggling. The inclusion of actors such as CBOs and trade unions can make services more democratic. Giving a greater voice to the millions of people who currently lack access to safe water can encourage governments to expand services.

Critics of PUPs point out that they are not a panacea for problems with urban water services. First, there is a question of financing. While North-South partnerships may be funded by the high-income country, South-South PUPs may struggle to finance travel of required personnel between the countries. Coordination is also an issue; most municipal utilities operate in isolation from one another, making it difficult to find an appropriate partner. For PUPs to occur on a global scale, an international partnering mechanism must be developed.

One group currently supporting partnering is the United Nations Secretary General's Advisory Board on Water and Sanitation, or UNSGAB. However, UNSGAB has taken the PUP idea and turned it into "Water Operator Partnerships," or WOPs. The most problematic aspect of WOPs is that they explicitly allow private sector partners, although all actors must work on a non-profit basis. Besides negating the political goal of PUPs to protect against privatization of public services, WOPs may lead to a watering-down of the initial progressive-alternative concepts of PUPs.

A final challenge for PUPs is their ability to resist the commercialization and corporatization of public sector utilities. Running a public water utility like a private business, even one that remains under state ownership, can put at risk the potential benefits of PUPs.

28

To conclude, PUPs can be seen as a step forward from PPPs, but if the goal is to provide water for all, a deeper discussion must be had about what "public" means and ways must be found to provide water in an equitable, socially just and sustainable manner.

Questions

How can we work to promote PUPs effectively with policy makers and governments?

How can PUPs help resolve some of the financing challenges of public utilities?

How can water justice movements assist in the sharing of PUP-related information and strategies among public water utilities?

Notes and links

Hall, David, Jane Lethbridge and Emanuele Lobina. (2005). "Public-Public Partnerships in Health and Essential Services' Municipal Services Project," *Occasional Papers No. 9*. Series eds. David A. McDonald and Greg D. Ruiters, Cape Town.

Transnational Institute and Corporate Europe Observatory. (2006). *Public Water for All: The role of public-public partnerships*. A "Reclaiming Public Water" discussion paper.

"Water Operator Partnerships." (2007). UNSGAB Water and Sanitation.

<http://www.unsgab.org/hapi/wops/index.htm>

World Development Movement. (2007). *EU – Go public on the global water crisis*. Supporter Briefing. London: World Development Movement.

Case 12

Employee Cooperatives in Water: The Case of Dhaka WASA

Introduction

In this case in Bangladesh, an innovative worker-driven public water management plan offered a clear and preferable alternative to plans preferred by the World Bank. However, the new management system is at risk of imitating the inefficiencies of privatized providers, leaving nagging questions about how to avoid such risks.

In the early 1990s, Dhaka Water Supply and Sewerage Authority (WASA), in Bangladesh, was struggling to meet water demand, a struggle that stemmed in part from rising unaccounted-for water losses and poor performance in revenue collection. To meet growing demand, and to reduce dependence on groundwater, Dhaka WASA decided to build a surface water treatment plant.

The World Bank's proposed loan to Dhaka WASA for this project was conditional on a privatization study, and experimental privatization of revenue billing, collection and other activities. Employees of Dhaka WASA, especially members of the Dhaka WASA Employees' Consumers Supplies Cooperative Society Ltd. (ECSCSL), resisted these conditionalities, largely out of fear of job losses. After discussions with representatives of government, Dhaka WASA management and the World Bank, it was decided that only one zone would be privatized and one would be given to the employees' cooperative, experimentally, for one year.

The private company and ECSCSL started in September 1997. In 1998 the monitoring committee found that ECSCSL had out-performed the private company in revenue collection increases and "unaccounted-for water" reductions. Subsequently, Dhaka WASA asked ECSCSL to take over two of its other seven revenue zones, and since then ECSCSL has been working under the Program for Performance Improvement (PPI).

Most of the workers at the PPI are on deputation from Dhaka WASA. Part of the reason for their success, it would seem, is the substantial increase in salaries paid by Dhaka WASA. It would also appear that slum dwellers have benefited from the Employees' Cooperative model, as workers will undertake normal water connections in informal houses, which Dhaka WASA rules do not normally permit.

At the beginning of each financial year Dhaka WASA management sets a zone-wide target for billing, collection and reduction of non-revenue water. The Employees' Cooperative has met the target every year, in part by simple changes such as ensuring that consumers receive bills monthly rather than bi-monthly (as was the case in Dhaka WASA-operated zones), and this has resulted in steady increases in revenue incomes. Higher incentives and attractive salary packages for the workers compensate for the heavy workload and fewer holidays. Workers are under continuous pressure to meet targets, and PPI management reserves the right to deport employees back to Dhaka WASA. PPI management also recruits people from the private sectors outside of Dhaka WASA, typically from specific revenue zones.

However, an independent study of the Cooperative conducted in 2004, on the initiative of the Dhaka WASA Board of Directors, reveals that the management authority of Dhaka WASA tends to underestimate financial targets in the Cooperative zones with a view to helping out the PPI program. Moreover, the PPI model gives rise to a conflict of interest among revenue workers within Dhaka WASA, as PPI workers receive a salary up to three times as high as that of workers doing the same job in Dhaka WASA. As a result, the cost of revenue collection in the PPI zone has almost doubled – suggesting that success in the PPI zone may be more statistical than real.

The PPI model for cost recovery may be an alternative to full privatization, as it saves the jobs of public service workers. However, it may also be a step towards privatization, preparing the way for a more fully corporatized and marketized system of water services.

Questions

What values should inform public water management? How should we promote both more democratic control of water, and transparency and accountability in these systems?

At what point does a public water management system cross the line and become “corporatized” or “marketized”?

Notes and links

Dhaka WASA website: <http://www.dvasa.org.bd/>



Case 13

Retaking Public Control of a Large Water Utility: Yorkshire Water and Welsh Water

Introduction

In June 2000, Yorkshire Water (a private company created in 1989 at the time of the privatization of the English and Welsh water supply industry) unveiled plans to mutualize its business through creating a non-profit “community mutual.” Consumers would own the assets, and the operation and maintenance of the water supply system would remain the responsibility of a new private management company. Customers, promised Yorkshire Water press releases, would benefit from mutualization. New, cheaper financing could be found that would permit increased investment or reductions in bills. The conflict between the shareholder and customer interest would be eliminated, claimed the company.

The news made headlines: “Has privatization gone full circle?” The query began to seem less far-fetched in the months that followed after plans were unveiled plans to mutualize the water business. One English water company made a formal proposal to mutualize (reorganize so that the majority of common stock is owned by customers or employees); others advertised their assets for sale, and still others proposed a radical refinancing of their core businesses, withdrawing from equity markets on which the public water companies had been floated just over a decade before.

Proposals to return water supply infrastructure to public control through the “mutual” model have attracted a great deal of interest, given the influential British model of water supply privatization, and the rapid growth of privatization and private sector participation in water supply around the world in the past decade. Some analyses have depicted the restructuring proposals as a “retreat” from privatization, and as a re-assertion of the Commons, or the community, over the “commodity” property relation.

In fact, many of these proposals – like that of Yorkshire Water - were thinly veiled attempts by the private water companies to sell their unprofitable assets back to customers – at a loss. One of the main reasons that private companies had begun to falter were tighter regulations applied by the Labour government after its election in 1997. Because the assets being sold to the customers were unprofitable, they were rejected by the industry’s economic regulator, Ofwat. Concerned by the growth in water poverty and high prices while share prices, dividends and CEO remunerations were soaring, Ofwat announced a reduction in the prices companies were allowed to charge to consumers. After a decade of outperforming the stock market, water company share prices abruptly fell, by roughly 50 per cent.

One proposal that did meet with the approval of the economic regulator was the conversion of Welsh Water into a not-for-profit company, owned by its members and limited by guarantee (a conventional form for charities in Britain). With four million customers, Welsh Water (now Glas Cymru) is one of the biggest water suppliers in the world, and it provides a significant example of how a not-for-profit model might work on a large scale. Some important facts about the Welsh Water/Glas Cymru example illustrate this:

- It was formed through the sale of securities to a new company to solicit investment, rather than through the “mutualization” method.
- It is wholly financed by debt, which is a cheaper source of finance than equity. This significantly lowered consumers’ bills, and created a surplus that could be invested in the network and in environmental protection, used to build financial reserves or returned to customers.
- The governance structure is designed to encourage participation: the members of Glas Cymru, who have no financial interest in the company and do not receive dividends, represent a cross-section of the Welsh community.
- The assets were sold at a reasonable price back to the public.
- The new company had broad-based democratic support approval of the Welsh Assembly.

A final lesson to draw from this case is the failure of a key justification for the British model of water supply privatization. Supporters of privatization argue that sourcing investment from equity, although more expensive than government debt, creates pressure on managers to make efficiency gains that offset the increased cost of capital. By the late 1990s, most of the privatized British water supply companies had moved away from equity finance, arguing that debt finance was significantly cheaper. This brought into question one of the key justifications for privatization: that equity markets, because of the scrutiny to which they subject managers, are preferred sources of finance. If debt finance is preferable, then the possibility of government- or community-owned water supply utilities logically becomes the preferred option. The British model of water privatization – in the mode originally envisioned by the Thatcher government – has failed on its own terms.

Questions

What are the most effective ways to strategize and act to “reclaim” public water utilities that have been privatized?

What kinds of relationships should be created or nurtured with political parties and authorities towards these goals?

32

Notes and links

Website for Glas Cymru: <http://www.dwrcymru.com/English/Company/Glascymru/>

Website for Yorkshire Water: <http://www.yorkshirewater.com/>



Photo credit, Instituto de la Naturaleza y la Sociedad de Oaxaca (INSO)

Case 14

Water Democracy in Action: Delegated (or shared) Water Governance Partnerships

Introduction

Delegated (or “devolved” or “shared” or “collaborative”) water governance may be broadly defined as the involvement of non-state actors in decision making for water management. This frequently (but not always) implies the delegation of decision making to lower scales of governance such as the watershed, municipality or region. Watershed partnerships are made up of stakeholders with diverse views. Watershed groups are typically smaller, initiated by private individuals rather than government, and composed of like-minded individuals, such as landowners or environmentalists.

Hundreds of watershed groups – groups established to monitor waterways – exist in the United States, and the European Union Water Framework Directive now legally requires the establishment of watershed groups in all of its river basins. Delegated water governance partnerships often involve the following:

- delegation by government (or the relevant authority) of water governance to a lower, more local scale;
- greater involvement of a wide variety of non-state actors;
- the use of a hydrographic boundary, such as the watershed, rather than political boundaries;
- collaborative decision-making processes, often emphasizing consensus and trust-building;
- science-based decision making, often requiring extensive fact-finding.

Various aspects of delegated governance have been incorporated into earlier water management initiatives (such as watershed-based agencies like the Tennessee Valley Authority). Perhaps the most novel aspects of delegated water governance partnerships are the involvement of a large number of stakeholders representing diverse interests who treat each other more or less as equals, and the principle that decision making should not be left solely to government experts.

The possible advantages of delegated water governance include

- access to “local” expertise that can improve the quality of decision making;
- the ability to adapt regulatory programs to meet local conditions;
- empowerment of stakeholders (particularly those traditionally marginalized);
- reinforcement of “social trust” between stakeholders, and reduction of conflict over competing uses;
- greater cooperation in information-sharing;
- greater political legitimacy (and thus enforceability) of water management planning outcomes; and
- more positive outcomes that have the “buy-in” and support of influential interests.

The possible disadvantages include

- focus on local environmental interests to the exclusion of regional or national environmental concerns;
- emphasis on consensus leading to politically workable solutions rather than environmentally optimal solutions;
- unequal representation of stakeholders at the local level;
- long-term sustainability undermined by large amounts of volunteer time required (risking “burnout”);
- greater overall costs, and more time required to produce outcomes, such as water use or watershed plans.

Factors in Success

The academic literature suggests that there are numerous criteria that increase the chances of success of delegated water governance partnerships: sustainable funding; effective leadership and management; interpersonal trust amongst participants; and committed, cooperative participants were the four factors most frequently mentioned in one of the largest studies to date of U.S.-delegated water governance partnerships (Leach & Pelkey, 2001). Additional factors included:

- broad and inclusive membership.
- adequate time, well-defined process rules.
- formal enforcement mechanisms.
- effective communication.
- adequate scientific and technical information.
- adequate monitoring, low or medium levels of conflict.
- limited (manageable) temporal and geographical scope of activities.
- training in collaborative skills.
- adequate community resources.

Not all of these factors of success can be provided or managed by governments, even where governments initiate the partnership. This suggests that the process for engaging in delegated water governance partnerships should acknowledge that the conditions do not always exist for collaborative approaches to work, and hence these approaches are not always appropriate.

Questions

The World Bank and IMF have been promoting devolution or decentralization projects for years as a part of structural adjustment. Should water justice movements embrace these types of models? If so, how do we do this and still promote equity, democracy and sustainability?

How can efforts to nurture local democratic control of water be supported by regional and national initiatives and systems?

Notes and links

See the *European Water Framework Directive*, http://ec.europa.eu/environment/water/water-framework/index_en.html, and the *Tennessee Valley Authority*, <http://www.tva.gov/>.



Case 15

Challenging the Myth of Public Penury: Alternative Financing Mechanisms

Introduction

One of the most enduring myths of the public-private water supply debate is the notion that public finance is insufficient, and that private capital – in some form – is the only solution to the world's water supply crisis.

The partial retreat of the private sector from specific regions (such as Africa) and specific types of contracts (rural areas, small cities) over the past few years has led some proponents of private sector involvement to suggest the need for the subsidization of private capital through direct aid transfers, risk mitigation guarantees and other risk mitigation strategies (such as the Camdessus Report's proposed "Devaluation Liquidity Backstop Facility," designed to mitigate or eliminate currency risk for water multinationals (Winpenny, 2003). Politically unfeasible and arguably technically impossible, the Camdessus proposals have met with limited support, although some are currently being developed.

Alternative financing mechanisms, however, may provide new – and in some cases, unexpected – sources of preferred investment. The evolution of financing of the British water industry since privatization in 1989 is a good example. By 2001, water companies had begun openly arguing that equity was an expensive source of finance, and that other sources of finance – in particular debt finance – were more viable in the long term. Following this argument, the majority of British water companies restructured their financing using long-term debt (such as bonds), which required protecting the low-risk, low-return monopoly water business from riskier, equity-financed activities. This directly contradicted one of the key arguments in favour of privatization: that equity investment is the most desirable because it creates pressure on managers to make efficiency gains that offset the increased cost of capital. In contrast, opponents of privatization argue that debt, and in particular government debt, is so much cheaper than equity that any efficiency gains under private ownership would not be outweighed by an increase in the cost of capital.

If private finance is increasingly being acknowledged to be of limited viability, and the cost of providing and replacing basic urban environmental infrastructure far exceeds likely private investment and international aid flows combined, then alternative methods of mobilizing finance must be considered. Such financing methods exist, of course, in most developed countries. Perhaps best known is the United States' Clean Water State Revolving Funds program, which provides states with concessional finance – which may be leveraged to generate additional capital for loans – for investment in infrastructure to improve water quality (Travis, Morris, & Morris, 2004). Other models – such as the Netherlands Water Boards levy and Bank "self-financing model" – follow similar principles: concessional finance with strict investment criteria, focused on comprehensive water management goals in addition to urban water infrastructure construction (Uijterlinde, Janssen & Figueres, 2003).

The success of these and similar initiatives has been such that USAID and the Environmental Protection Agency have recently created a program to extend the State Revolving Funds model to developing countries (particularly middle-income countries, with high rates of savings and availability of domestic capital). Under this program, new strategies for fostering and accessing local public capital markets (such as issuing municipal bonds) have been successful in countries such as India and Mexico. Most importantly, the local finance used in these cases has advantages (avoidance of currency risk; greater accountability; the catalytic role of bond finance in broad-based, urban governance reforms) that outweigh the cost of overcoming the potential hurdles and barriers (such as legislative barriers, the small-scale nature of many urban infrastructure projects, the lack of local bond rating capacity). The joint USAID-JBIC "Clean Water for People" initiative has built upon this model, for example, by supporting the development of State Revolving Fund-type financing in the Philippines and India (in the states of Karnataka and Tamil Nadu), together with grant support and local currency investment guarantees (designed to encourage local financial institutions to lend to new sectors and under-served areas) as

appropriate. Most importantly, the USAID model overcomes the lack of access to capital markets and eliminates the currency risk to which private, multilaterally- and bilaterally-funded projects are subject.

Questions

Should water justice movements be working towards “public debt” instead of “private debt” for water financing? What are the obstacles, risks and opportunities of this shift?

What northern government development agencies are more hospitable to the aims of the water justice movement?

Where do we as water justice movements draw the line when it comes to types of private participation – is the acceptance of a loan from a private creditor acceptable? What type of participation is not?

Notes and links

Concerning the USAID-JBIC initiative, see

<http://usinfo.state.gov/xarchives/display.html?p=washfile-english&y=2005&m=May&x=20050503125027TJkcolluB0.1300318>

For more on microcredit initiatives, see http://www.lboro.ac.uk/well/resources/Publications/Briefing_per cent20Notes/BN16_per cent20Local_per cent20financing.htm

For the “watercredit initiative,” see <http://www.water.org/waterpartners.aspx?pgID=866>



Case 16

MAMA-86 and Water in Ukraine

Introduction

In the context of an emaciated post-U.S.S.R. Ukrainian state and the West's economic "shock therapy," public services floundered and people suffered. In this context, non-state actors such as the NGO/movement MAMA-86 have stepped in to powerfully intervene on behalf of both poorer citizens and the embattled social institutions of Ukraine.

MAMA-86 is a national women-led NGO that has spearheaded struggles both against water solutions based in privatization and in favour of nurturing public systems that aim for universal access. The action of this organization was prompted by harsh realities resulting from a difficult post-communist transition: in 2005, it was estimated that 25 per cent of water supply and distribution infrastructure had reached its planned lifespan, while 22 per cent of supply systems were in a "state of emergency" and 35 per cent worn and inadequate.

With Ukrainian women leading the drive and citing drinking water as their primary concern and most pressing problem, MAMA-86 helped to launch campaigns as well as community and city-based initiatives designed to advance community control of such basic priorities as testing and cleaning of wells, research relating to pollution levels in water sources, and the installation of sanitation and safe drinking water systems in critical institutions such as schools and hospitals. They have also promoted water meters as a way to raise consciousness about water usage and wastage, and engaged in educational initiatives concerning water-borne illnesses and conservation strategies.

In one powerful example at the local level, MAMA-86 helped provide legal support and resources to local residents in Odessa who were grappling with an undemocratic move by a local village head to authorize five businessmen to "rent" a section of the Kuchurgan river basin, a decision that resulted in illegal dams and the drying up of the river, causing extreme damage to local farmers and citizens. This contract was annulled with the help of MAMA-86. The organization has also contributed to national legislative and policy frameworks aimed at equity of water access for all. In addition, despite attempted preferential treatment for the water corporation by the European Bank for Reconstruction and Development, MAMA-86 helped to lead opposition to, and eventually block, a privatization bid for Odessa's water system by Suez Corporation.

Questions

Is there a "creeping privatization" danger in celebrating an NGO's role in participating in the delivery of water services?

Many criticize NGOs/CSOs by highlighting the fact that they are not democratic, beyond their memberships (or even within). Do we need standards to evaluate the work of such organizations towards water justice?

Notes and links

For more information, see the chapter "Ukraine: Women act against poverty and privatisation" from Reclaiming Public Water, as well as the organization's website: http://www.mama-86.org.ua/drwater/drwater_e.htm. See also a recent article featuring their work in the magazine "Sanitation Now."



Photo credit, Andy Line

Case 17

Tarun Bharat Sangh and Common Water in Rajasthan

Introduction

Reviving local initiatives for water – which have thrived for ages in the arid northern regions of India – Rajendra Singh and others in the local organization Tarun Bharat Sangh (TBS) in the arid province of Rajasthan, have helped to lead by example in implementing local, community-driven and controlled water solutions.

The population growth rate in Rajasthan region is estimated to be the highest in the country, but the region is also suffering from ever-increasing water scarcity and stress. Across India, due to excessive drawing down and “mining” of groundwater, supplies of this resource are severely depleted in Delhi, Punjab, Haryana, Rajasthan, Bihar, Madhya Pradesh, Gujarat, Daman, Diu, Andhra and Tamil Nadu. Rajasthan in particular, which has an estimated 5.4 per cent of the national population, 18.7 per cent of all livestock in the country and 13.9 per cent of the total “cultivable area,” hosts only 1.16 per cent of the national share of surface water, and 1.7 per cent of groundwater resources.

With leadership provided by women who customarily take responsibility for providing their families with safe freshwater, Tarun Bharat Sangh (TBS), a non government organization that brings people together on the issues of management of forests and water resources, has participated in the construction of *jobads*, earthen small-scale reservoirs that help to harvest rainwater and improve the recharge of groundwater resources. As a result of concerted work, thousands of *jobads* have been built since Rajendra Singh and TBS have become increasingly active, having started the work in Alwar in 1985.

The impact has been tremendous: five rivers that used to run dry after the annual monsoon season are now alive with flows once again, groundwater levels have risen by an estimated six metres, and crucial forest cover, which helps to maintain integrity and water-retaining capacity of the soil, has increased by 33 per cent. In addition, TBS has helped to challenge major efforts to privatize and abuse freshwater resources. For instance, in the Alwar area where Singh began the work that would transform into TBS, non-violent community action has prevented 40 water-intensive industrial companies (including bottled water and soft drink makers) from setting up factories. Elsewhere in India, prominent transnational corporations such as Coca-Cola have been challenged for their extreme degradation of water resources, and environmentally and socially destructive waste practices. One of TBS’s current campaigns focuses on the protection of the Yamuna River through challenging existing development plans and promoting forest conservation and expansion in the river’s floodplain.

Some have criticized the methods and framework of TBS’s work in Rajasthan, citing a lack of attention to existing inequalities, and local elites’ disproportionate impact within the village councils, or “gram sabhas,” which form the basis of local governance under the Panchayat system, introduced forcefully into India in 1993. The gram sabhas’ purpose as a unit of local village governance was to afford more democratic control over decision making, towards fostering greater equity at the local level.

Questions

Given the disproportionate responsibility women face for the home, farming, water and general family care, how should we as water justice movements work towards women’s further empowerment without burdening them further?

How can water justice movements better share knowledge and experience of viable alternatives and strategies promoting democratic control of water for the common good?

What kinds of methods/strategies should be used to make sure that local democratic structures are indeed democratic and equitable?

Notes and links

For information on the jobad, see <http://www.rainwaterharvesting.org/Rural/Traditional1.htm#joba>.

TBS's website can be found at <http://www.tarunbharatsangh.org/index.htm>.

Also see a report by TBS on the revival of the Arvari river: http://www.tarunbharatsangh.org/programs/water/arvari_a-peoples_movement.pdf.

For a more critical perspective, see the article "Political economy of panchayats in south India," available at http://www.cultureandpublicaction.org/bijupdf/EPW_PE_Panchayats.pdf.



Photo credit, New Mexico Acequia Association

Case 18

“Common Assets Trusts” as a Political and Economic Project

Introduction

Many in the global water justice movement are hesitant to see a solution in putting a price tag on water. At the same time, many argue that water’s loss through over-exploitation and abuse could be at least partially mitigated through pricing arrangements. Mirroring a “cap and tax” solution offered for CO² emissions control, the notion of commons trusts attempts to put a value on the natural commons in the hope of curbing exploitation and raising revenue for multiple potential uses, including infrastructure enhancements.

The idea of a “common assets trust” is being floated in the American state of Vermont as a means to curb the unsustainable exploitation of elements of the “natural commons” such as groundwater. If passed, a bill (S-44) would effectively recognize groundwater as a form of common property subject to usage limits and fees for industrial users. By attempting to assign a “true cost” for water, such an initiative would aim to progressively cap water use for mass purposes. Bill S-44 proposes that the fee income could revert to every individual Vermonter as a type of “dividend” from fees attached to mass usage of water resources. Today groundwater is not assigned a value that reflects its “true cost,” including impact overuse degradation of ecosystems and long-term sustainable access. In addition, such a bill would give priority in times of shortage to use of water for drinking and agriculture over commercial use.

According to Peter Barnes of the Tomales Bay Institute, common property rights should be ascribed to elements of the natural commons as a way to ensure that our planet and its gifts – including water resources – are valued properly for their contribution to social and ecological well-being.

Barnes argues that such a shift entails a new form of capitalism which has the potential to limit ecological exploitation and degradation, as well as facilitate either individual dividends, or even public investment in common goods and public services. In Maine, legislators are attempting to expand the coverage of the “public trust doctrine” to groundwater, where such legal protection currently covers surface waters such as ponds and tidal rivers. Both Vermont and Maine are considering various means of charging adequately valued usage fees for mass industrial users such as bottled water operations. In Michigan, the women-led social movement Sweetwater Alliance has challenged the ecological impact of Nestlé’s water bottling operations and its effective privatization of water through bottling of groundwater for sale.

Similar efforts have begun to expand and flourish. Other campaigns in the U.S. and Canada have targeted bottled water in particular, and the role of large and small corporations that seek to profit from the effective commodification and privatization of water for sale to consumers, pitched through heavy marketing as a preferable alternative to tap water from municipal utilities. At the same time, local municipalities in New Hampshire have begun pressing for the implementation of ordinances and by-laws to limit or ban the bulk withdrawal of groundwater resources for bottled water operations. Such momentum echoes the successful struggles of women in Plachimada, India, to resist Coca-Cola bottling operations that have had a serious impact on water levels and agriculture in the region.

Questions

Should water be “valued” (given a price tag that may vary according to its use) in order to be protected for sustainable and equitable use?

How would new forms of common property rights interact with existing private property rights?

How can we most effectively pressure states to not simply side with large water users and corporations but rather to advance broad, public and sustainable access to water?

Notes and links

Bill S-44: <http://www.leg.state.vt.us/docs/legdoc.cfm?URL=/docs/2008/bills/intro/S-044.HTM>

For information on movements opposing bottling factories and bottled water, see the following:

“Inside the bottle campaign”: www.insidethebottle.org

Food and Water Watch: <http://www.foodandwaterwatch.org/>

Sweetwater Alliance: <http://www.waterissweet.org/about.html>

The India Resource Center: <http://www.indiaresource.org/campaigns/coke/2008/cokeimplicatedteri.html>.

For Peter Barnes’ book on the economics of the commons, Capitalism 3.0, see <http://www.capitalism3.com/>



Case 19

The Fight for Public Water in Felton, California

Introduction

In 2001, Cal-Am purchased Felton's water system, which had been privately owned since the late 1800s, as part of its larger acquisition of Citizen's Utilities. Shortly after that, RWE purchased American Water.

The trouble started in November 2002 when Cal-Am ignited anger in the Felton community with a 74 percent rate hike. In response, the Friends of Locally Owned Water (FLOW) was born. FLOW fought to reduce the rate hike, urged the county government to create a public agency to control the water system and opposed the company's plan to merge two water districts.

On Friday, May 30, 2008,¹ the people of Felton, California prevailed in wresting control of their water from a corporate giant. For nearly six years, many of the 3,000 residents of the Felton Water District had been organizing to buy back the community's water system from California American Water (Cal-Am). Cal-Am is a subsidiary of American Water, which had been owned by the German multinational energy and water titan, RWE.

Less than one week before an eminent trial against Cal-Am was to take place to determine the value of Felton's water system, the San Lorenzo Valley (SLV) Water District (where Felton is located) announced that it would pay Cal-Am \$10.5 million in cash to buy back the system.² Cal-Am agreed to do the deal to avoid a jury trial, said Jim Mosher, who heads up the legal committee for Felton Friends of Locally Owned Water (FLOW).³

"This is a great victory for the citizens of Felton and should inspire other communities to challenge private water utilities that are extorting huge, unjustified rate increases and failing to protect sensitive watershed properties¹," Mosher said. "The SLV Water District has done an excellent job representing us and we look forward to having them manage the Felton water system."⁴

The agreement stated that Cal-Am would donate 250 acres of forested watershed land in return for a tax break. Mosher questioned, however, whether the land transfer is a donation, since the appraisal shows it to be an integral part of the deal and the price.⁵

The push for public water in Felton won its first success in July 2005 when FLOW spearheaded passage of "Measure W," despite Cal-Am's deep-pocketed opposition. The measure authorized an \$11 million bond to buy the water system. The bond would be financed through higher taxes.

The SLV Water District offered Cal-Am \$7.6 million for Felton's water system, but Cal-Am refused. Its leadership stated that the system was not for sale at any price and expressed its determination to oppose all public acquisition efforts. Apparently, Cal-Am wished to stem a domino effect of citizens taking control of their water resources.⁶ Felton's petition to the California Public Utilities Commission to approve the proposed public buyout failed after the commission succumbed to heavy Cal-Am lobbying.⁷

Four months later, RWE announced it would sell its stake in American Water, including the Cal-Am division. The reason given was to focus on European energy investments. However, leaked minutes from an RWE board meeting reveal that "the German company was taken aback at the difficulties of turning a profit in the American water market, and that its initial estimates of efficiencies and rate increases were overly optimistic."⁸ It also cited "considerable political resistance to privatization of the water sector" as a reason to exit the U.S. water market.

When RWE offered up Cal-Am in an April 2008 initial public stock offering, the results were disappointing. RWE planned to offer shares for \$24-\$26, but at the last minute dropped the offering price to \$22-\$23. That still wasn't enough and on opening day shares sold at \$21.50 and the company

only sold 36 percent of its shares. As stock analyst Bill Simpson summed it up: “...this IPO is nothing more than an exit strategy for parent company RWE.”⁹

Meanwhile, Felton residents did not back down. Its purchase offer brushed off, the community used eminent domain proceedings to force a buyout. Cal-Am responded by doing all it could to make the system seem more expensive. Its own appraisal valued the system at \$25 million, far more than Felton’s \$7.6 million offer. This appraisal was based in large part on Cal-Am’s assertion that the 250 acres of watershed land should be valued based on future revenues the acreage would generate through timber sales and commercial development, an appraisal method that the community hotly disputed.¹⁰

Eminent domain proceedings in California have two parts – the “right to take” hearing before a judge to determine whether the purchase serves the public interest, and a “valuation” trial in which a jury decides how much the property is worth. In both cases, Cal-Am’s tactics caused delays and increased expenses for the SLV Water District. In the end, the company conceded the public’s right to take the water system and settled the acquisition price without a trial.¹¹

“We fought off every one of Cal-Am’s tactics to derail the process,” Mosher said. “But in the end, our position was completely vindicated.”

In their successful six-year crusade for public water, the people of Felton have helped lead the way for numerous other U.S. communities fighting corporate control of water.

Questions

What lessons does the Felton case offer to other communities trying to return their water to public ownership and management?

How might a federal trust fund help struggling municipalities keep and improve their drinking water and waste water systems? How could such a fund help communities buy back systems from private operators?

What additional laws might help communities like Felton? How can we pass such legislation, both in the U.S. and around the world?

Notes and Links

Food & Water Watch’s water page: www.foodandwaterwatch.org/water

Felton FLOW: www.feltonflow.org

¹ “Felton prevails in six-year fight to acquire water system from California-American Water and German multinational corporation RWE.” Felton FLOW news release, May 30, 2008.

² *Ibid.*

³ Mosher, Jim. Personal interview. Legal counsel for Felton FLOW, June 2, 2008.

⁴ *Ibid.*

⁵ *Ibid.*

⁶ *Ibid.*

⁷ *Ibid.*

⁸ Magyar, Chris J. “Crooked Pipes: FLOW prepares for the final battle against RWE for control of Felton’s water utility.” *Good Times*, March 19, 2008. Available at: www.gtweekly.com/news/crooked-pipes-1

⁹ “Wall Street unimpressed by IPO.” Felton FLOW news update, May 5, 2008. Available at: www.feltonflow.org

¹⁰ Mosher, Jim. Personal interview. Legal counsel for Felton FLOW, June 2, 2008.

¹¹ *Ibid.*

Case 20

A Trust Fund to Keep Water Clean, Safe and Affordable

Introduction

Communities across the United States are struggling to repair and rejuvenate drinking and waste water systems built long ago, in some cases dating to the Civil War era. Time and a growing population have taken their toll on water infrastructure, including leaks and sewage overflows. Paying for the upgrades strains the budgets of cities, large and small.

As communities across the U.S. seek to overcome fiscal constraints in paying for water system upgrades and maintenance, many municipal officials face pressures to privatize their systems, lulled into believing that with privatization, their budget woes will disappear.

Pressure to resolve water problems – quantity, quality and fair access – is acute. Public health agencies issued more than 25,000 warnings against swimming at beaches on U.S. coasts in 2006. A majority of beach closings are due to sewage overflows and malfunctioning sewage plants.

The National Research Council recently warned that Americans could expect more water-borne disease outbreaks if there are not “substantial investments” made to improve the U.S.’ water pipes and systems.

In fact, there is currently a shortfall in the U.S. of more than \$22 billion per year between the funds available and what is needed to keep water safe for human and environmental health. The federal government has tended to cut the main source of funding for clean water year after year. When adjusted for inflation, federal funding has fallen 70 percent since 1991.

Under budget strains, many communities have opted for the false promise of privatization. Multinational corporate water barons have pitched their services to many municipal governments with assurances that they will increase efficiency and reduce costs. But after almost a decade, the bitter reality of privately controlled water is seeping in as shown by maintenance problems in Atlanta, sewage spills in Milwaukee, corruption in New Orleans, and political meddling in Lexington.

In reality, publicly-controlled water utilities often outperform their private counterparts and save consumers money, while delivering safe, clean water. The Water Infrastructure Network, a broad coalition of public utilities, public interest groups and others, has formed to call for national legislation to fill the funding gap with a Trust Fund. Funds would be collected from water polluters such as agricultural chemical producers, bottled beverage producers, and via a Corporate Environmental Income Tax. With these revenues, a dedicated trust fund for sustained infrastructure improvements for safe and affordable public water will be created.

Making federal funding available to states, cities and towns will improve water quality in all American communities. Poor wastewater treatment upstream means higher costs for safe drinking water downstream.

A trust fund for water systems will be based on the following principles:

- Environmentally sound use of our water resources;
- Pollution prevention and drinking water source protection for human and environmental health;
- Water conservation by the largest water users, including agriculture and industry;
- Public participation and accountability for public officials;
- Access to affordable water for low-income households;
- Public funds for public utilities,
- Appropriate user fees for industries that degrade water resources.

Water is a public trust. It's time for a trust fund that protects our water and keeps it clean and safe. For more information, see <http://www.win-water.org/index.shtml>

Questions

How would such a Trust Fund be administered? Should trustees be elected or appointed? How can this Trust Fund maintain a long-term vision and strategy in the face of short-term political agendas?

Who are the allies who could join a coalition for the creation of such a trust fund, both from within civil society organizations and among elected officials? What arguments could be used to attract allies into such a coalition?



Case 21

Establishing Limits on Groundwater Withdrawals For The Public Good

Introduction

In Vermont, a bipartisan group of legislators co-sponsored legislation to protect that state's groundwater – a Commons on which the entire state depends. The legislation, approved in 2008, created a new permitting program for large-scale withdrawals and declared the water resource to be a public trust.

The Vermont Natural Resources Council (VNRC) had long pressed for a state-managed program to help safeguard the state's groundwater resources – the fresh, cold water that flows beneath our feet. After a long and hard effort, VNRC helped lead a successful effort to convince the Legislature and Governor to remove Vermont from its precarious position as one of the last states in the nation to adequately protect this increasingly valuable natural resource.

In June 2008, the state of Vermont enacted a comprehensive groundwater protection program, effectively helping to curb the unchecked water consumption and contamination by homes, farms, and businesses that was threatening this life-sustaining resource. Nearly 66 percent of Vermont's population depends on groundwater for their drinking water supply. Groundwater, and its interconnection with surface water, provides an essential function by recharging Vermont's rivers, lakes, wetlands and streams, thereby helping to maintain surface water quality and support habitat for fish and other aquatic species.

With the declaration of groundwater as a public trust, the nearly two-thirds of Vermonters who depend on groundwater for their drinking water supply have a law in place that will help protect drinking water from overconsumption, depletion and privatization.

Vermont had no previous legislation limiting groundwater takings. Starting in 2010, the law establishes a permit system for water withdrawals of over 57,600 gallons a day. The citizen push for this groundwater protection and conservation measure came from the Vermont Natural Resources Council (VNRC) and won strong bipartisan support. The law authorizes the gathering of critical information about who is using the groundwater, in what quantity, and for what purpose, and assesses this information against data collected in state maps of groundwater supplies. The most contentious aspect of the bill was whether to declare groundwater a public trust resource. Another contentious issue in the bill was ranking priorities for groundwater use, giving drinking water and small-scale farming priority over commercial use during water shortages. Exceptions and grandfathered uses are included for farms, water utilities, fire districts and some geothermal systems. The law ultimately did declare groundwater to be a “public trust resource.”

Proponents argued that this public trust designation was critical to create an obligation for the state to manage its groundwater in the public interest. The legal determination clarifies that groundwater is not owned not by one person, but by all, and that the public interest in this resource takes precedence over private interests. Strong resistance came from segments of the agricultural community, in particular large dairy interests, who strongly resisted limitations on their use of water. To avoid pushback from the bottled water industry and other large-scale users, VNRC convened several negotiations among the stakeholders to craft a protection program that would manage the resource. While the bill goes a long way to safeguard Vermont's primary drinking water resource, advocates for water as a public trust pledge to continue to press for strong rules to implement the legislation and other safeguards.

Questions

What are priority uses for groundwater for the public good? How should these priorities be ranked and decided upon?

What coalition in your community could be formed to pass legislation guiding groundwater use?

Notes and Links

http://www.nytimes.com/2008/08/21/us/21water.html?_r=1&em for a New York Times article featuring the Vermont victory for water as a public trust.

<http://www.vnrc.org/article/articleview/7093/1/942/> for a description of the Vermont Natural Resources Council groundwater program.



Photo credit, Instituto de la Naturaleza y la Sociedad de Oaxaca (INSO)

Conclusion

Mapping Diverse Conceptions and Strategies for the Water Commons



The project is a "Community Water Commons" that is a shared resource for the community. It is a shared resource for the community. It is a shared resource for the community.

- 1) Define the commons.
- 2) Assess the commons.
- 3) Protect the commons.
- 4) Treat the commons.
- 5) Access the commons.
- 6) Manage the commons.
- 7) Adapt the commons.
- 8) Restore the commons.
- 9) Integrate the commons into a UN convention.
- 10) Use the commons to protect water.

Keeping these principles in mind, the aim of these concluding comments is to briefly draw out some recurring themes, hopes, strategies, questions and conceptions concerning the water Commons that are raised in the 21 tools offered in this anthology. This task, obviously, does not begin and end with this report, as we hope you will add your own cases that in turn, will lead to new debates and conclusions.

One way to think of the central themes and questions flowing through these tools and cases is to examine some essential conflicts faced in each of them. Four main conflicts can be teased out of the tools and their nuances and contexts, which link into the Commons principles enumerated above:

- 1) Conflicting conceptions of water as a spiritual and practical foundation of life versus a commodity to be bought and sold.
- 2) Conflicting ideas of property and rights with respect to water.
- 3) Conflicting tendencies in the governance of water – democracy and egalitarianism on the one hand leading to broad water access and control, and “plutocracy²” or inequality of water access and control on the other, leading to a form of water apartheid exacerbated by gender and ethnic cultural marginalization and exclusion.
- 4) Conflicting visions of development, that is, what is a desirable or “sustainable” way of life?

The first and fourth conflicts loom large, an elephant in the room for the water justice movement. How do we define water’s role in our societies; indeed what kind of societies do we seek? The diversity of human cultural traditions, with their distinct ways of organizing relationships both within families and in the broader community dictate that water will be, thought of in diverse ways. Many of the tools offer the example of seeing water as simultaneously a source of spiritual abundance and a limited resource that constrains our unsustainable consumer urges – a way to tie human societies to nature’s limits that is inherently provocative. The Mohawk conception of thinking seven generations in advance, for example, taking into account the interest of people and the earth seven generations in advance in the context of decision-making in the present, captures this idea well. The St’át’imc plans for integrating ecological sustainability into initiatives for watershed and river management are also based on the notion that water is sacred and limited, and are linked to the initiatives of indigenous peoples in Licto, Black Mesa, and the Andean region in creating their own methods and systems for governing water. It is clear that water justice movements stand to benefit from the detailed sort of work that anthropologists such as Boelens have been doing to analyze local water systems in indigenous societies.

This brings us to the second conflict listed above, which relates to the way different cultural traditions conceive of property. The way in which water is increasingly privately managed (in both western and non-western societies), leaving vast number of people poor and thirsty, is a direct affront to egalitarianism and compassion – core to spiritual and religious traditions. The struggle to preserve and reclaim water as common good is thus a reaffirmation of spiritual traditions of equality. The important thing to remember is that although settler and indigenous ways of seeing and privatizing water have diverged, innovative practices – including some described in this report – can help curb an excessive emphasis on the private and bring out our more community-oriented traditions.

Inclusion and exclusion are fundamental pillars of the western idea of property, usually thought of in three different categories – private, common, and state. Critical democratic theorist C.B. Macpherson offered that the best way to conceive of property is as an “actual right,” an “enforceable claim” to “some use or benefit of something.”³ Within this general scope, he and others have argued that exclusive,

² The “rule of the wealthy,” “ploutos,” rather than the “rule of the people,” “demos.”

³ (Macpherson, 1978)

individual property rights have largely taken over western and settler ideas of property in the sense of “ownership” for one’s private, exclusive, individual good.

Institutions such as the World Bank have encouraged the progressive elimination or marginalization of common property systems for water and other parts of the Commons in favour of an individualized property approach: in other words, traditionally, northern corporations and states have pushed for more enclosures of more commons. However, even the World Bank has shown a fragmented approach to these issues in recent times. It has become clearer that when it comes to systems for managing common resources, individual property systems have been far more prone to lead to the deterioration and degradation of the Commons than common property systems. As mentioned in Maude Barlow’s companion paper to this report, it was Garrett Hardin’s article *The Tragedy of the Commons*⁴ that set the stage for much enthusiasm for privatization and individualization of property in policy circles. Hardin argued that because different individual grazers would pursue their own (economically conceived) “rational self-interest” of maximizing their cattle on common land, the land would be progressively destroyed. He advocated either nationalization or privatization (that is, a turn to state or private property) to redress this problem. However, the consensus that has built during the past 30 years or so since Hardin first published his original article is that the problem is not with common property arrangements per se, but rather with the distinct problem of “open-access” systems, where users are not constrained by any effective system of rights or responsibilities when it comes to using a resource such as water.⁵

There exists a true wealth of examples of local common property systems involving water – agriculture, forestry, fisheries and a host of other natural resources that are not open-access systems. With their roots in particular regions, cultures and traditions, many common property systems have been lauded for their ability to contribute to ecological sustainability, as well as in providing an effective system of rights and responsibilities for users in a given Commons system.

The case of the Acequia Associations, and some of the difficulties that they face in New Mexico, highlights well the second conflict in this way. Where the Associations carefully prescribe duties and rights for each member, the action by one member to attempt to defy the rules of the Associations for their own private benefit demonstrates the tension between individual rights and property versus common rights and property. If the state legislation that respects and supports the Associations’ ability to control water governance for the purposes of equity and sustainability should be challenged or repealed, then the ability of the Associations to protect the acequias and common property rights in water could be jeopardized. One person’s desire to divert water for whatever reason – but centered on their exclusive, private benefit and rights – comes into conflict with a group of farmers’ rights to continue with their livelihood, made more precarious by increasing water scarcity due to climate change.

At the same time, not all Commons systems may be committed to principles of equity and sustainability in practice. This brings us to the third conflict mentioned above. Some studies of common property systems – including those of renewed community management in Cochabamba, Bolivia and the right to water in Latin America described in this report – find that some efforts to institutionalize collective rights to the Commons can reproduce or even exacerbate existing inequalities with respect to race, class, and gender. These realities raise important questions. If a few families, because of their economic power and/or disproportionate land ownership, exert dominant influence at the local level even through Commons systems, what is the solution to promoting democracy and equity, and ensuring the conservation of water for the good of all? How is it possible to ensure that water users with less economic power (poorer indigenous and women “smallholders,” subsistence farmers) can have as much

⁴ (Hardin, 1968)

⁵ (Bromley, 1992a, 1992b; Bromley & Cernea, 1989; Feeny, Berkes, McCay, & Acheson, 1990; Ostrom, Burger, Field, Norgaard, & Policansky, 2005)

voice in local water systems' governance as those with more economic power – for example, large landholders and industrialists? The permissiveness of most states' policies when it comes to allowing water-takings by water-intensive industrial/corporate users stands as a difficult obstacle to realizing water justice at the local level. Many tools for the water Commons, from the examples of the Municipal Department of Water and Sewage in Brazil to public-public partnerships to the case of MAMA-86 show the attempt to explicitly target water services for those with less power and influence. But even the best laid plans may run into difficulties. Even within national constitutions enshrining the right to water, what kinds of strategies can we foresee or help nurture to build true local water democracy, so that individuals and communities and even ecosystems themselves can have voice to redress “water apartheid” and unsustainable exploitation in its various forms? How can water justice initiatives best promote a “water soft path” in these difficult contexts – a path that emphasizes conservation of this life-giving resource?⁶

There is also a danger that Commons systems could be co-opted into a larger process of legitimizing water exploitation at a grander scale. Some have argued that growing enthusiasm for different forms of localized common property systems for water and other resources can be traced to the necessity for such regimes to act as a “buffer zone” to facilitate the mass exploitation of ecosystems. In Brazil, for example, small-scale indigenous rubber tappers' common property systems have served as an ecologically sustainable model for centuries and are lauded by development authorities such as the Bank and the Brazilian state, as well as certain supportive NGOs, as crucial for the sustainability of the Amazon. Meanwhile, the continuing pace of broad deforestation for agriculture (notably for cane sugar and ethanol in Brazil) in this region betrays a tension between the goals of common and individual property regimes.⁷ The second, third and fourth conflicts all inform the difficulties raised in such an example. These types of realities point to the necessity to not only democratize control of the water Commons at the local level, but to democratize Commons principles to the regional and national level to ensure their realization.

52

Further, important concerns are raised in many of the tools on devolved or shared governance and in the principle of subsidiarity, or moving policy formation and management closest to end users. While decentralization of the management of natural resources has been increasingly touted as an overall cure for the ills of local management of Commons, such agendas have spotty histories in other sectors. The World Bank and International Monetary Fund have actively promoted decentralization in health and education for years as a way to reduce public sector expenditures and make them more efficient. However, decentralization of the authority to manage local systems has not always been accompanied by adequate support from higher state levels in financing services or infrastructure. Many critics allege that decentralization schemes devolving authority over water systems from central governments to local levels are both a tactic for shedding principal financial responsibility for water treatment and distribution⁸ and do not resolve inequities between communities and regions within a given state.

Embedded in many of the cases is the idea of a public or common trust to protect the water Commons from being engulfed within commodification schemes. Indeed, all of these tools are offered in the spirit of conceiving alternative strategies that can resist this increasingly dominant narrative. The first and second conflicts centre on this pivotal issue: If we refuse to allow water to become more and more subject to commodification, then what kinds of alternative systems do we need to devise that help reinforce the idea of water as a Commons, and as a human right? With respect to the push for a new global or national Covenant on water discussed in many of these cases: how can this right to water be given implementation “teeth” and address nature's right to water as well? How can a globally-binding Covenant enshrining water as a Commons and as a human right also be supported by “charters of earth rights embedded in participating states' national legislative frameworks, offering individuals and communities the chance to press grievances to local, regional and national authorities when it comes to water justice and ecosystem restoration?

We hope that this report has offered some models that can be adapted and applied, as well as questions that will create even more dialogue. We further hope that this combination of iconic cases and provocative questions might be used as learning resources to forge socially and ecologically just water management systems. We look forward to continuing conversation and action with you over the years ahead to strengthen this powerful grassroots movement to reclaim our water Commons.

⁶ (Gleick & Wolff, 2002; Gleick 2003a, 2003b; Brandes et al, 2005)

⁷ (Goldman, 1998)

Sources and Further Reading

- Aakiwumi, F. (2003). Indigenous People, Women and Water: The Importance of Local Knowledge for Project Planning in an African Context. *Greener Management International*(42), 67.
- Agarwal, B. (2000). Conceptualising environmental collective action: why gender matters. *Camb. J. Econ.*, 24(3), 283-310.
- Ahluwalia, M. (1998). "Representing Communities: The Case of a Community-Based Watershed Management Project in Rajasthan, India." Presented at "Crossing Boundaries," the seventh annual conference of the International Association for the Study of Common Property, Vancouver, British Columbia, Canada, June 10-14.
- Anand, P. B. (2007). Right to water and access to water: an assessment. *Journal of International Development*, 19(4), 511-526, <http://dx.doi.org/510.1002/jid.1386>
- Annan, K. A., & Secretary-General, U. N. (2005). In *Larger Freedom: Towards Development, Security and Human Rights for All: Report of the Secretary-General: United Nations*.
- Astephen, D. (2003). Reducing Water and Sanitation Backlogs in Rural Areas: Umgeni Water's Response as an Implementing Agent within KwaZulu-Natal, South Africa. *Greener Management International*(42), 47.
- Athukorala, K. (2006). Collective Action for Protection of Water Rights: The Case of Thuruwila, Sri Lanka. Paper presented at the Survival of the Commons: Mounting Challenges and New Realities," the Eleventh Conference of the International Association for the Study of Common Property (IASCP), <http://dlc.dlib.indiana.edu/archive/00001830/>
- Attwater, R., Booth, C. A., Simmons, B., & Yadava, R. N. (2003). Community Based Water Resource Management and Workable Common Property. *Water Resources System Operation: Proceedings of the International Conference on Water and Environment (WE-2003)*, December 15-18, 2003, Bhopal, India.
- Bakker, K. (2003). A political ecology of water privatization. *Studies in Political Economy*, 70, 35-48.
- Bakker, K. (2007). Commons or Commodity? The Debate over Private Sector Involvement in Water Supply. In K. Bakker (Ed.), *Eau Canada: The Future of Canada's Water* (pp. 185-204). Vancouver: UBC Press.
- Bakker, K. (2007). Trickle Down? Private sector participation and the pro-poor water supply debate in Jakarta, Indonesia. *Geoforum*, 38(5), 855-868.
- Baland, J. M., Bardhan, P., & Bowles, S. (2004). *Inequality, Collective Action and Environmental Sustainability*. Princeton: Princeton University Press
- Baland, J. M., & Platteau, J. P. (2004). Collective action on the commons: the role of inequality. In J. M. Baland, P. Bardhan & S. Bowles (Eds.), *Inequality, Cooperation and Environmental Sustainability*. Princeton: Princeton University Press.
- Baland, J.-M., & Platteau, J.-P. (1999). The Ambiguous Impact of Inequality on Local Resource Management. *World Development*, 27(5), 773-788.
- Balanya, B., Brennan, B., Hoedeman, O., Kishimoto, S., & Terhorst, P. (2005). *Reclaiming Public Water: Achievements, Struggles and Visions from Around the World*, Transnational Institute and Corporate Europe Observatory, January.
- Balota, A. (2004). Exercising Community Property Rights in Water Resources Management. Paper presented at the Deutscher Tropentag 2004: Rural Poverty Reduction through Research for Development and Transformation, Humboldt-Universität zu Berlin, Agricultural and Horticultural Faculty, October 5 - 7.
- Barbanell, E. (2001). *Common-Property Arrangements and Scarce Resources: Water in the American West*: Praeger/Greenwood.
- Bardhan, P. (1993). Symposium on Management of Local Commons. *The Journal of Economic Perspectives*, 7(4), 87-92.
- Bardhan, P., & Dayton-Johnson, J. (2000). Heterogeneity and Commons Management. *Proceedings of the 8th International Conference on Common Property*, IASCP. Bloomington, Indiana, May.
- Bardhan, P., & Dayton-Johnson, J. (2001). Inequality and the governance of water resources in Mexico and South India. Paper prepared at the Workshop on Economic inequality, Collective Action and Environmental Sustainability, Santa Fe Institute, September.
- Bardhan, P., Ghatak, M., & Karaivanov, A. (2005). Inequality and Collective Action. Forthcoming in P.
- Bardhan, P., & Ray, I. (2006). Methodological approaches to the question of the commons. *Economic Development and Cultural Change*, 54(3), 655-676.
- Baril, L. K. (1992). Private Property and the Public Trust Doctrine Developing New Paradigms for Government to Balance Individual Property Rights and Public Resource Protection. Presented at Inequality and the Commons, the third annual conference of the International Association for the Study of Common Property, Washington, DC, September 17-20.
- Benda-Beckmann, F. v., Benda-Beckmann, K. v., & Wiber, M. G. (2006). The Properties of Property.
- Benedito, P. F. B., Clarice, S., & Fatima, P. (2005). Water Charges: Paying for the Commons in Brazil. *International Journal of Water Resources Development*, 21, 119-132.

- Benjamin, C. (2006). Decentralization and Livelihoods in the Malian Sahel: Challenges of Legal Pluralism in Decentralized Natural Resource Management. Paper presented at the Natural Resources and Environment.
- Berkes, F., Colding, J., & Folke, C. (2000). Rediscovery of Traditional Ecological Knowledge as Adaptive Management. *Ecological Applications*, 10(5), 1251-1262.
- Berkes, F., Davidson-Hunt, I., & Davidson-Hunt, K. (1998). Diversity of Common Property Resource Use and Diversity of Social Interests in the Western Indian Himalaya. *Mountain Research and Development*, 18(1), 19-33.
- Berkes, F., & Wittwer, S. H. (1974). Meeting World Food Needs. *BioScience*, 24(9), 484-485.
- Birkenfeld, D. (2003). Reclaiming Water as a Commons. *Southwest chronicle*, 4(2).
- Blomley, N. (2007). Making Private Property: Enclosure, Common Right and the Work of Hedges. *Rural History*, 18(01), 1-21.
- Blumel, E. B. (2004). The implications of formulating a human right to water. *Ecology law quarterly*, 31(4), 957-1006.
- Boelens, R. (2003). Local Rights and Legal Recognition: The Struggle for Indigenous Water Rights and the Cultural Politics of Participation. *Third World Water Forum*, 16, 23.
- Boelens, R. (2005). Water rights and participatory irrigation development: the case of Licto, Ecuador. IAPAD.
- Boelens, R., & Hoogendam, P. (2002). Water Rights and Empowerment. *Uitgeverij: Van Gorcum*.
- Bond, P. (2008). Decentralization, Privatization and Countervailing Popular Pressure: South African Water Commodification and Decommodification. In V. Beard, F. Mirafab & C. Silver (Eds.), *Decentralization and Planning: Contested Spaces for Public Action in the Global South*. London: Taylor and Francis.
- Bond, P. (2004). Reclaiming Water Pricing for Participatory Public Services. www.waterjustice.org/uploads/attachments/pdf68.pdf
- Bond, P., & Dor, G. (2002). *Unsustainable South Africa: Environment, Development, and Social Protest*. London: Merlin Press.
- Bond, P., & Wilson, Z. (2007). A Water Policy Revolution. *Global Social Policy*, 7(2), 143.
- Bose, P. (2006). Shift to (De)Centralisation Creates Contradictions in Policy of Managing Commons: A Case Study from Semi-Arid Tribal Districts of Western India. Paper presented at the 11th biennial conference of the International Association for the Study of Common Property (IASCP): "Survival of the Commons: Mounting Challenges and New Realities", Bali, Indonesia, <http://dlc.dlib.indiana.edu/archive/00001850/>
- Boyle, J. (2003). The Second Enclosure Movement and the Construction of the Public Domain. *Law and Contemporary Problems*, 33-75.
- Braga, B. P. F., Strauss, C., & Paiva, F. (2005). Water Charges: Paying for the Commons in Brazil. *International Journal of Water Resources Development*, 21(1), 119-132.
- Brandes, O. M., Brooks, D. B., & Governance, P. P. o. E. (2005). *The Soft Path for Water in a Nutshell: Friends of the Earth: POLIS Project on Ecological Governance*, University of Victoria.
- Brannstrom, C. (2005). Decentralising water resource management in Brazil. In J. C. Ribot & A. M. Larson (Eds.), *Democratic Decentralisation Through A Natural Resource Lens*. London: Routledge.
- Bromley, D. W. (1992). The commons, common property, and environmental policy. *Environmental and Resource Economics*, 2(1), 1-17.
- Bromley, D. W. (1992). The Commons, Property, and Common-Property Regimes. *Making the Commons Work: Theory, Practice, and Policy*, 3-15.
- Bromley, D. W. (1992). *Making the Commons Work: Theory, Practice and Policy*. San Francisco: ICS Press.
- Bromley, D. W., & Cernea, M. M. (1989). *The Management of Common Property Natural Resources: Some Conceptual and Operational Fallacies*: World Bank.
- Brown, J. R., & Rivera, J. (2000). Acequias de Comun: The Tension between Collective Action and Private Property Rights. <http://dlc.dlib.indiana.edu/archive/00000227/00/rivieraj041300.pdf>
- Bruns, B. R. (2006). Reconstituting Water Rights: Pathways for Polycentric Praxis. Paper presented at the 11th biennial conference of the International Association for the Study of Common Property (IASCP): "Survival of the Commons: Mounting Challenges and New Realities", Bali, Indonesia, <http://dlc.dlib.indiana.edu/archive/00001851/>
- Bruns, B. R., & Meinzen-Dick, R. (1998). Negotiating Water Rights in Contexts of Legal Pluralism: Priorities for Research and Action. Presented at "Crossing Boundaries," the seventh annual conference of the International Association for the Study of Common Property, Vancouver, British Columbia, Canada, June 10-14.
- Bruns, B. R., & Meinzen-Dick, R. S. (2000). *Negotiating water rights*. Vistaar and London: Intermediate Technology Press.
- Burchi, S. (2005). The interface between customary and statutory water rights: a statutory perspective. Paper presented at the International workshop on African Water Laws: Plural legislative Frameworks for Rural Water Management in Africa, Gauteng, South Africa. www.indigenouswater.org/user/Customary%20Water%20Rights%20-%20Burch.pdf
- Cameron, J., & Gibson, K. (2005). Alternative Pathways to Community and Economic Development: The Latrobe Valley Community Partnering Project. *Geographical Research*, 43(3), 274-285.

- Cardenas, J. C. (2006). Overcoming asymmetries in the commons with sub-optimal strategies. In M. Basili, M. Franzini & A. Vercelli (Eds.), *Environment, Inequality, and Collective Action*. London: Routledge.
- Cassidy, L. (2000). CBNRM and Legal Rights to Resources in Botswana. IUCN Botswana: CBNRM Support Programme. <http://www.cbnrm.bw/>
- Chikozho, C. (2002). Restructuring the Commons: Water reforms in Southern Africa in the context of global water resources management paradigm shifts. Paper presented at the "Commons in an Age of Globalisation" conference, the Ninth Conference of the International Association for the Study of Common Property (IASCP). <http://dlc.dlib.indiana.edu/archive/00000805/00/chikozhoc130502.pdf>
- Coles, A., & Wallace, T. (2005). *Gender, Water and Development*. Oxford: Berg.
- Cotula, L., Orwa, N., & Muhanji, A. (2005). Securing the commons in an era of privatisation: policy and legislative challenges. Summary conclusions of the second international workshop of the Co-Govern network, Nakuru, Kenya, 25-28 October 2004: Jun 2005-IIED. www.iied.org/pubs/pdfs/9556IIED.pdf
- Crow, B. (2001). Water: gender and material inequalities in the global South. Center for Global, International and Regional Studies. <http://repositories.cdlib.org/cgi/viewcontent.cgi?article=1000&context=cgirs>
- Cruz, M. C. (1989). *Water as Common Property: The Case of Irrigation Water Rights in the Philippines*. Common Property Resources: Ecology and Community Based Development. London: Belhaven.
- Currie-Alder, B., Thompson, L., & Bustamante, R. (2006). Insights on Water Governance: Research in the Middle East/North Africa and Latin America. www.indiana.edu/~iascp/bali/papers/Currie_alder_Thompson_Bustamante.pdf
- Dietz, T., Ostrom, E., & Stern, P. C. (2003). The Struggle to Govern the Commons. *Science*, 302(5652), 1907-1912 <http://www.sciencemag.org/cgi/content/abstract/1302/5652/1907>
- Dilworth, R. (2007). Privatization, the World Water Crisis, and the Social Contract. *PS: Political Science & Politics*, 40(01), 49-54.
- Dixon, A., & King's. (2003). *Indigenous Management of Wetlands: Experiences in Ethiopia*. London: Ashgate.
- Dungumaro, E. W., & Madulu, N. F. (2003). Public participation in integrated water resources management: the case of Tanzania. *Physics and Chemistry of the Earth*, 28(20-27), 1009-1014.
- Faruqui, N. I., Biswas, A. K., & Bino, M. J. (2001). *Water Management in Islam*: United Nations Univ. Press.
- Feeny, D., Berkes, F., McCay, B. J., & Acheson, J. M. (1990). The Tragedy of the Commons: Twenty-two years later. *Human Ecology (Historical Archive)*, 18(1), 1-19.
- Ferguson, A. E. (2004). Decentralization, Participation and Access to Water Resources in Malawi. University of Wisconsin-Madison, BASIS Collaborative Research Programme. www.uneca.org/awich/reports/malawi%20water%20resources%20decentralization%20and%20participation.pdf
- Fernandez-Gimenez, M. E. (2002). Protecting the Commons: A Framework for Resource Management in the Americas *Ecological Engineering*, 19(1), 83-85.
- Fortmann, L., & Roe, E. (1985). Common Property Management of Water in Botswana. In NRC (Ed.), *Proceedings of the Conference on Common Property Resource Management*, April 1985 Washington: National Academy Press.
- Galaz, V. (2006). *Power in the Commons: The Politics of Water Resource Institutions in Chile and Sweden*. PhD Thesis. Goteborg University.
- Geisler, C. (2000). Property Pluralism. In C. C. Geisler, & Daneker, G. (Ed.), *Property and Values: Alternatives To Public And Private Ownership*. Washington: Island Press.
- George, J. (2006). Traditional vs. Formal Institutions in Managing Common Pool Resources: A Case Study of Traditional Drinking Water System 'Oornin' in Ramnathpuram District, Tamil Nadu, India. Paper presented at the 11th biennial conference of the International Association for the Study of Common Property (IASCP): "Survival of the Commons: Mounting Challenges and New Realities", Bali, Indonesia, <http://dlc.dlib.indiana.edu/archive/00001903/>
- George, P., Berkes, F., & Preston, R. J. (1996). Envisioning Cultural, Ecological and Economic Sustainability: The Cree Communities of the Hudson and James Bay Lowland, Ontario. *The Canadian Journal of Economics / Revue canadienne d'Economie*, 29(Special Issue: Part 1), S356-S360.
- Gibson, K., & Cameron, J. (2005). Building Community Economies in Marginalised Areas. In T. Smyth & A. Jones (Eds.), *Community and Local Governance in Australia*. Sydney: UNSW Press.
- Gibson-Graham, J. K. (2005). *Building Community Economies: Women and the Politics of Place*: Women and the Politics of Place, Bloomfield, CT: Kumarian Press.
- Gibson-Graham, J. K. (2005). Surplus possibilities: Post-development and community economies. *Singapore Journal of Tropical Geography*, 26(1), 4-26.
- Gleick, P. (2003a). Soft Path solution to 21st-century water needs. *Science*, 320(5650), 1524-1528.
- Gleick, P. H. (1996). Basic water requirements for human activities: meeting basic needs. *Water International*, 21(2), 83-92.
- Gleick, P. H. (1998). The human right to water. *Water Policy*, 1(5), 487-503.
- Gleick, P. (2003b). *Global Freshwater Resources: Soft-Path Solutions for the 21st Century* (Vol. 302): American Association for the Advancement of Science.
- Goldman, M. (1997). "Customs in Common": The Epistemic World of the Commons Scholars. *Theory and Society*, 26(1), 1-37.

- Goldman, M. (1998). The Political Resurgence of the Commons. In M. Goldman (Ed.), *Privatising Nature: Political Struggles for the Global Commons* (pp. 1-19). New Brunswick/New Jersey: Rutgers University Press.
- Goldman, M. (1998). *Privatizing Nature: Political Struggles for the Global Commons*: Pluto Press.
- Gunderson, L. H., & Holling, C. S. (2002). *Panarchy: Understanding Transformations in Human and Natural Systems*: Island Press.
- Hale, S. (2007). The Significance of Justiciability: Legal Rights, Development, and the Human Right to Water in the Philippines. *SAIS Review*, 27(2), 139-150.
- Hardin, G. (1968). The tragedy of the commons. *Science*, 162.
- Harris, L. M. (2005). Negotiating Inequalities: Democracy, Gender, and Politics of Difference in Water User Groups of Southeastern Turkey. In F. Adaman & M. Arsel (Eds.), *Environmentalism in Turkey: Between Democracy and Development*. Burlington: Ashgate.
- Harris, L. M., & Gantt, W. (2007). Gender and shifting water governance : differential effects of privatization, commodification, and democratization: Land Tenure Center, Nelson Institute of Environmental Studies, University of Wisconsin.
- Harvey, S., & Stringer, R. (1999). Common property water use: the case of the Southern Vales. Policy Discussion Paper, Adelaide, CIES.
- Hodgson, S. (2004). Land and water-the rights interface. *FAO Legislative Study*(84), v+120pp.
- Hoedeman, O. (2006). Public Water for All: the Role of Public-Public Partnerships. Transnational Institute and Corporate Europe Observatory. Amsterdam: Transnational Institute and Corporate Europe Observatory.
- Hoffmann, I. (2004). Access to Land and Water in the Zamfara Reserve. A Case Study for the Management of Common Property Resources in Pastoral Areas of West Africa. *Human Ecology*, 32(1), 77-105.
- Homer-Dixon, T. F. (2006). *The Upside of Down: Catastrophe, Creativity, and the Renewal of Civilization*: Island Press.
- Joel, R. (2003). Water supply & sanitation as “urban commons” in Indian metropolis: how redefining the State/ Municipalities relationships should combine global and local de facto commoners. Paper presented at the Ninth Conference of the International Association for the Study of Common Property, Victoria Falls, Zimbabwe, <http://dlc.dlib.indiana.edu/archive/00000913/00/ruetj010402.pdf>
- Johnson, C. (2004). Uncommon Ground: The ‘Poverty of History’ in Common Property Discourse. *Development and Change*, 35(3), 407-433.
- Joshi, D. (2005). Misunderstanding Gender in Water: Addressing or Reproducing Exclusion. In A. Coles & T. Wallace (Eds.), *Gender, Water and Development*. Oxford: Berg.
- Kato, S. S., & Okumu, J. O. (2006). The Role of Community Based Institutions in Sustainable Management of Forest, Water and Soil: A Case Study of Mount Elgon Ecosystem, Uganda. Paper presented at the 11th biennial conference of the International Association for the Study of Common Property (IASCP): “Survival of the Commons: Mounting Challenges and New Realities”, Bali, Indonesia. <http://dlc.dlib.indiana.edu/archive/00001933/>
- Kerr, J. (2006). The Watershed Commons: Lessons Learned. Paper presented at the 11th biennial conference of the International Association for the Study of Common Property (IASCP): “Survival of the Commons: Mounting Challenges and New Realities”, Bali, Indonesia, <http://dlc.dlib.indiana.edu/archive/00001936/>
- Kho, J., & Agsaoay-Sano, E. (2006). Country Studies on Customary Water Laws and Practices: The Phillipines, Food and Agriculture Organization of the United Nations. <http://www.fao.org/Legal/advserv/FAOIUCNcs/Philippines.pdf>.
- Kipuri, N. N. O. (1989). *Maasai Women in Transition: Class and Gender in the Transformation of a Pastoral Society*. Temple University, Ph.D.
- Larson, S. (2006). Water Allocation and Management Issues in Outback Australia. Paper presented at the 11th biennial conference of the International Association for the Study of Common Property (IASCP): “Survival of the Commons: Mounting Challenges and New Realities”, Bali, Indonesia, <http://dlc.dlib.indiana.edu/archive/00001949/>
- Leach, W. D., & Pelkey, N. W. (2001). Making Watershed Partnerships Work: A Review of the Empirical Literature. *Journal of Water Resources Planning and Management*, 127(6), 378-385.
- Lebel, L., Daniel, R., & Badenoch, N. (2006). State, Commerce and Commons: Conservation with Communities in Upper Tributary Watersheds. Paper presented at the 11th biennial conference of the International Association for the Study of Common Property (IASCP): “Survival of the Commons: Mounting Challenges and New Realities”, Bali, Indonesia, <http://dlc.dlib.indiana.edu/archive/00001953/>
- Loehman, E., & Becker, N. (2006). Cooperation in a Hydro-geologic Commons: New Institutions and Pricing to Achieve Sustainability and Security. *International Journal of Water Resources Development*, 22(4), 603-614.
- Maan, Y., Polomaing, B., Suardika, P., Asmoro, P., Merza, M.-A., & Joicey, P. (2006). Collaborative Community-Based Management of the Aesesa Watershed, Indonesia. Paper presented at the 11th biennial conference of the International Association for the Study of Common Property (IASCP): “Survival of the Commons: Mounting Challenges and New Realities”, Bali, Indonesia, <http://dlc.dlib.indiana.edu/archive/00002003/>
- MacDonald, D., & Ruiters, G. (2006). Rethinking Privatisation. Towards a critical theoretical perspective. In Transnational Institute (TNI) and Public Services International Research Unit (PSIRU) (Eds.), *Public services Yearbook*. London and Amsterdam: PSIRU/TNI, pp. 9-20.

- MacDonald, D., & Ruiters, G. (2005). *The Age of Commodity: Water Privatization in Southern Africa*: James & James/Earthscan.
- Macpherson, C. B. (1964). *The Political Theory of Possessive Individualism: Hobbes to Locke*. Oxford: Oxford University Press.
- Macpherson, C. B. (1978). *Property, Mainstream and Critical Positions*: University of Toronto Press.
- Mann, E. (2003). Sustainable Water Supply for a Remote Rural Community in Mozambique: Oxfam Australia and the Chicomo Rural Development Project*. *Greener Management International*(42), 59.
- Meinzen-Dick, R. (2007). Going Beyond Panaceas Special Feature: Beyond panaceas in water institutions. *Proceedings of the National Academy of Sciences*, 104(39), 15200-15205. <http://www.pnas.org/cgi/content/abstract/15104/15239/15200>
- Meinzen-Dick, R., & Bakker, M. (1999). Irrigation systems as multiple-use commons: Water use in Kirindi Oya, Sri Lanka. *Agriculture and Human Values*, 16(3), 281-293.
- Meinzen-Dick, R., & Knox, A. (2001). Collective action, property rights, and devolution of natural resource management : a conceptual framework. In R. Meinzen-Dick, A. Knox, & M. Di Gregorio (Eds.), *Collective action, property rights, and devolution of natural resource management : exchange of knowledge and implications for policy*. Feldafing: ZEL.
- Meinzen-Dick, R., & Pradhan, R. (2005). Analyzing water rights, multiple uses, and intersectoral water transfers. In D. Roth, R. Boelens, & M. Zwartveen (Eds.), *Liquid Relations: Contested Water Rights and Legal Complexity*: Chapel Hill: Rutgers University Press.
- Meinzen-Dick, R., & Zwartveen, M. (1998). Gendered participation in water management: Issues and illustrations from water users' associations in South Asia. *Agriculture and Human Values*, 15(4), 337-345.
- Meinzen-Dick, R. S., & Pradhan, R. (2002). Legal Pluralism and Dynamic Property Rights. CGIAR Systemwide Program on Collective Action and Property Rights, International Food Policy Research Institute. www.capri.cgiar.org/pdf/CAPRIWP22.pdf
- Merrey, Drechsel, Vries, d., & Sally. (2005). Integrating "livelihoods" into integrated water resources management: taking the integration paradigm to its logical next step for developing countries. *Regional Environmental Change*, 5(4), 197-204 <http://dx.doi.org/110.1007/s10113-10004-10088-10115>
- Moench, M., Caspari, E., & Dixit, A. (1999). *Rethinking the mosaic: investigations into local water management*. Kathmandu/Boulder: Nepal Water Conservation Foundation/Institute for Social and Environmental Transition.
- Morris, L., & FernandoGallardoCabrera, L. (2003). The Involvement of the Private Sector in Water Servicing: Effects on the Urban Poor in the Case of Aguascalientes, Mexico. *Greener Management International*(42), 35.
- Mostertman, I. (2005). Paying for the commons: an investigation into a participatory decision-making process in implementing a bulk water pricing system in the Paraiba do Sul river basin. MSc thesis, Irrigation and Water Engineering group, Wageningen University.
- Mwangi, E. (Cartographer). (2006). Subdividing the Commons: The Politics of Property Rights Transformation in Kenya's Maasailand. CAPRI Working Paper # 46. www.capri.cgiar.org/pdf/CAPRIWP46.pdf
- Mwangi, E. (2007). Subdividing the Commons: Distributional Conflict in the Transition from Collective to Individual Property Rights in Kenya's Maasailand. *World Development*, 35(5), 815-834.
- Mwangi, E. (2005). The Transformation of Property Rights in Kenya's Maasailand: Triggers and Motivations. CGIAR Systemwide Program on Collective Action and Property Rights, International Food Policy Research Institute. www.capri.cgiar.org/pdf/CAPRIWP35.pdf
- Nellis, J. R. (2007). Privatization in Developing Countries: A Summary Assessment. *SAIS Review*, 27(2), 3-29. Paper commissioned by FAO under a joint FAO/IUCN research project investigating the interface of customary and statutory water rights, in progress.
- Oakerson, R. J. (1992). Analyzing the Commons: A Framework. *Making the commons work: Theory, practice and policy*, 41-59.
- Office for Sustainable Development, U. B. f. A. (2003). Chapter 3: Community-Based Natural Resource Management (CBNRM). In *Environmental Guidelines for Small Scale Activities in Africa (EGGSA)*.
- Oki, T., & Kanae, S. (2006). *Global Hydrological Cycles and World Water Resources (Vol. 313)*: American Association for the Advancement of Science.
- Ostrom, E. (1990). *Governing the Commons: The Evolution of Institutions for Collective Action*: Cambridge University Press.
- Ostrom, E. (2002). Reformulating the commons. *Ambiente & sociedade*, 5-25.
- Ostrom, E., Burger, J., Field, C. B., Norgaard, R. B., & Policansky, D. (2005). Revisiting the Commons: Local Lessons, Global Challenges. *Evolutionary Perspectives On Environmental Problems*, 284(9), 278-282.
- Ostrom, E., & Gardner, R. (1993). Coping with Asymmetries in the Commons: Self-Governing Irrigation Systems Can Work. *The Journal of Economic Perspectives*, 7(4), 93-112.
- Ostrom, E., Stern, P. C., & Dietz, T. (2003). Water rights in the commons. *Water Resources Impact*, 5(2), 9-12.
- Password, F. (2007). The "Commons" Versus the "Commodity": Alter-globalization, Anti-privatization and the Human Right to Water in the Global South. *Antipode*, 39(3), 430-455.

- Pollard, S. R., Cousins, T., & Toit, D. d. (2006). Seeking the Linkages: Integrating Community Governance of Water Resources and Land Tenure Reform. Paper presented at the 11th biennial conference of the International Association for the Study of Common Property (IASCP): "Survival of the Commons: Mounting Challenges and New Realities", Bali, Indonesia.
- Qiu, S. (2004). Making CBNRM work: piped water system management in CB village. IDRC research results, <https://idl-bnc.idrc.ca/dspace/handle/123456789/31354>
- Quiggin, J. (1993). Common property, equality, and development. *World Development*, 21(7), 1123-1138.
- Renzetti, S. (2005). Economic Instruments and Canadian Industrial Water Use. *Canadian Water Resources Journal*, 30(1), 21-30.
- Renzetti, S., & Dupont, D. (2003). Ownership and Performance of Water Utilities. *Greener Management International*(42), 9.
- Roth, D., Boelens, R., & Zwartveen, M. (2005). *Liquid relations: contested water rights and legal complexity*: Rutgers University Press.
- Roy, J., & Crow, B. (2004). Gender Relations and Access to Water: What We Want to Know About Social Relations and Women's Time Allocation: Paper CGIRS-2004-5. Center for Global, International and Regional Studies, Santa Cruz, California. <http://repositories.cdlib.org/cgirs/CGIRS-2004-5>
- Sakurai, T., & Palanisami, K. (2001). Tank irrigation management as a local common property: the case of Tamil Nadu, India. *Agricultural Economics*, 25(2-3), 273-283.
- Salman, S. M. A., & McInerney-Lankford, S. A. (2004). *The Human Right to Water: Legal and Policy Dimensions*: World Bank Publications.
- Santos, C., & Valdomir, S. (2006). Uruguay: la democracia directa en la defensa del derecho al agua. In ILSA (Ed.), *Movimientos sociales y luchas por el derecho humano al agua en América Latina*. Bogota: ILSA, pp. 171-179.
- Saravanan, V. S. (2002). Institutionalising community-based watershed management in India: Elements of institutional sustainability. *Water Science & Technology*, 45(11), 113-124.
- Scott, C. A., & Silva-Ochoa, P. (2001). Collective action for water harvesting irrigation in the Lerma-Chapala Basin, Mexico. CGIAR Systemwide Program on Collective Action and Property Rights, International Food Policy Research Institute. www.capri.cgiar.org/pdf/CAPRIWP20.pdf
- Scruggs, L. A. (1998). Political and economic inequality and the environment. *Ecological Economics*, 26(3), 259-275.
- Sheehan, J. (2005). The Commodification of the Asian Commons: Water as a Property Right. *Asia Pacific Journal of Environmental Law*, 9(1).
- Shiva, V. (1991). *The Violence of the Green Revolution: Third World Agriculture, Ecology and Politics*: London.
- Shiva, V. (1997). *Biopiracy: The Plunder of Nature and Knowledge*: South End Press.
- Shiva, V. (2000). *Stolen Harvest: The Hijacking of the Global Food Supply*: South End Press.
- Shiva, V. (2002). *Water Wars: Privatization, Pollution and Profit*: South End Press.
- Shiva, V. (2005). *Globalization's New Wars: Seed, Water & Life Forms*. New Delhi: Women Unlimited.
- Singh, N. (2006). Indigenous Water Management Systems: Interpreting Symbolic Dimensions in Common Property Resource Regimes. *Society & Natural Resources*, 19(4), 357-366.
- Smyth, P., Reddel, T., & Jones, A. (2005). *Community and Local Governance in Australia*. Sydney: UNSW Press.
- Southgate, C., & Hulme, D. (2000). Uncommon Property The Scramble for Wetland in Southern Kenya. In P. Woodhouse, H. Bernstein & D. Hulme (Eds.), *African Enclosures?: The Social Dynamics of Wetlands in Drylands*. London: James Currey Limited.
- Spiertz, H. L. J. (1998). Water Rights and Legal Pluralism: Some Basics of a Legal Anthropological Approach. Paper presented at the seventh annual conference of the International Association for the Study of Common Property (IASCP), Vancouver, British Columbia. <http://dlc.dlib.indiana.edu/archive/00000163/00/spiertz.pdf>
- Sullivan, J. D., Rogers, J., & Bettcher, K. E. (2007). The Importance of Property Rights to Development. *SAIS Review*, 27(2), 31-43.
- Thomas, A., Carr, S., & Humphreys, D. (2001). *Environmental Policies and Ngo Influence: Land Degradation and Sustainable*: Routledge.
- Thompson, S. C., & Stoutemyer, K. (1991). Water Use as a Commons Dilemma: The Effects of Education that Focuses on Long-Term Consequences and Individual Action. *Environment and Behavior*, 23, 314.
- Travis, R., Morris, J., & Morris, E. (2004). State implementation of federal environmental policy: Explaining leveraging in the Clean Water State Revolving Fund. *Policy Studies Journal*, 32(3), 461-480.
- Trawick, P. (2002). The Moral Economy of Water: General Principles for Successfully Managing the Commons. *Gaia*, 11(3), 191-194.
- Trawick, P. B. (2003). *The Struggle for Water in Peru: Comedy and Tragedy in the Andean Commons*. Stanford: Stanford University Press.

- Turner, S. (2004). A crisis in CBNRM? Affirming the commons in southern Africa. Paper presented at the Tenth Conference of the International Association for the Study of Common Property, Oaxaca, Mexico. http://dlc.dlib.indiana.edu/archive/00001501/00/Turner_Crisis_040508_Paper361.pdf
- Twyman, C. (2000). Participatory Conservation? Community-based Natural Resource Management in Botswana. *The Geographical Journal*, 166(4), 323-335.
- Uijterlinde, R., Janssen, A., & Figueres, C. (2003). Success factors in self-financing local water management. Amsterdam: Partners for Water.
- UNESCO. (2003). Facts and Figures - Water and Indigenous Peoples. http://www.wateryear2003.org/en/ev.php-URL_ID=5550&URL_DO=DO_TOPIC&URL_SECTION=201.html
- Van Harten, G. (2005). Private authority and transnational governance: the contours of the international system of investor protection. *Review of International Political Economy*, 12(4), 600-623.
- Van Koppen, B. (1998). Gendered Water and Land Rights in Construction: Rice Valley Improvement in Burkina Faso. Paper presented at the seventh annual conference of the International Association for the Study of Common Property (IASCP), Vancouver, British Columbia. <http://www.indiana.edu/~iascp/Final/koppen.pdf>
- Vardhan, M. (2006). Property Rights and Collective Action around Water Management in Kenya's Lower Nyando Basin. http://dlc.dlib.indiana.edu/archive/00002051/00/Vardhan_Mamta.pdf
- Vargas-Hernandez, J. (2006). Co-Operation and Conflict between Firms, Communities, New Social Movements and the Role of Government: The Cerro de San Pedro Case. Paper presented at the conference "Old Economy Regions in the New Economy: A North/South Dialogue on social, cultural and economic issues", Thunder Bay, Ontario. http://papers.ssrn.com/sol3/Delivery.cfm/SSRN_ID879071_code76069.pdf?abstractid=879071&mirid=2
- Vasimalai, M. P. (2006). Shaping Stakeholders Perspectives: Survival of the Common Traditional Tanks in South India. Paper presented at the 11th biennial conference of the International Association for the Study of Common Property (IASCP): "Survival of the Commons: Mounting Challenges and New Realities", Bali, Indonesia. http://dlc.dlib.indiana.edu/archive/00002053/00/Vasimalai_MP.pdf
- Vassolo, S., & Doll, P. (2005). Global-scale gridded estimates of thermoelectric power and manufacturing water use. *Water Resources Research*, 41(4), W04010.
- Villarroel, E., & Peredo, C. (2006). The Struggle for Water as a Common Good: The Experience of Andean Communities in Bolivia. Paper presented at the 11th biennial conference of the International Association for the Study of Common Property (IASCP): "Survival of the Commons: Mounting Challenges and New Realities", Bali, Indonesia, <http://dlc.dlib.indiana.edu/archive/00002054/>
- Wandscheer, C. B. (2006). Commons Resources in Brazil: Biopiracy, Bioprospection, Biotechnology. Paper presented at the 11th biennial conference of the International Association for the Study of Common Property (IASCP): "Survival of the Commons: Mounting Challenges and New Realities", Bali, Indonesia, <http://dlc.dlib.indiana.edu/archive/00002058/>
- Watkins, K. et al (2006) Human Development Report 2006: Beyond scarcity: Power, poverty and the global water crisis. New York: United Nations Development Programme.
- Wheeler, E. A. (2006). Water policy alternatives for the Southern Ogallala Aquifer: economic and hydrologic implications. *Agricultural and Applied Economics*, Texas Tech University, MSc thesis.
- Winpenny, J. (2003). Financing Water for All: Report of the World Panel on Financing Water Infrastructure. Geneva: World Water Council/Global Water Partnership/Third World Water Forum.
- Wolff, G., & Gleick, P. H. (2002). The Soft Path for Water. *The World's Water 2002-2003: The Biennial Report On Freshwater Resources*.
- Woodhouse, P., Bernstein, H., & Hulme, D. (2000). African Enclosures?: The Social Dynamics of Wetlands in Drylands. London: James Currey Limited.
- WWAP. (2006). The UN World Water Development Report - Facts and Figures - Water and industry. http://www.unesco.org/water/wwap/facts_figures/water_industry.shtml
- Yamaguchi, K. (2006). Scarcity and Conflict of Resources: Chom Thong Water Conflict. Paper presented at the 11th biennial conference of the International Association for the Study of Common Property (IASCP): "Survival of the Commons: Mounting Challenges and New Realities", Bali, Indonesia, <http://dlc.dlib.indiana.edu/archive/00002068/>
- Zuo, Q., Ma, J., & Wu, Z. (2005). Concept and model of "supporting capacity of water resources" in urban areas. In D. Savic, J. C. Bertoni, N. Marino & H. Savenije (Eds.), *Sustainable Water Management Solutions for Large Cities*: ZUO, International Association for Hydrological Sciences publication 293. Fontainebleu: IAHS.
- Zwarteveen, M., & Meinzen-Dick, R. (2001). Gender and property rights in the commons: Examples of water rights in South Asia. *Agriculture and Human Values*, 18(1), 11-25.



www.canadians.org



www.onthecommons.org/water

