



National Network on
Environments and Women's Health

Réseau pancanadien sur la santé
des femmes et le milieu

Women and Water in Canada

The Significance of Privatization and Commercialization Trends for Women's Health

Prepared for Women and Health Care Reform and
The National Network on Environments and Women's Health

August 2009



Copyright © 2009 National Network on Environments and Women's Health

Individual copyright to their work is retained by the authors. All rights reserved.
No part of this report may be reproduced or transmitted in any form by
any means without permission in writing from the publisher.

Published by:
National Network on Environments and Women's Health
Suite 5021, TEL Building
York University
4700 Keele Street
Toronto, Ontario M3J 1P3
Telephone: 416.736.5941 Fax 416.736.5986
Email: nnewh@yorku.ca
Web site: www.yorku.ca/nnewh
www.womenandwater.ca

Women and Health Care Reform and the National Network on
Environments and Women's Health (NNEWH) are financially supported
by the Women's Health Contribution Program, Bureau of Women's
Health and Gender Analysis, Health Canada. The views expressed herein
do not necessarily represent official policy of Health Canada.

August 2009

With contributions by Vera Pavri, Corian Crawley, Pat Armstrong,
Anne Rochon Ford, Patricia Hania, Margaret Haworth-Brockman,
Karin Jordan, Meera Karunanathan, and Dayna Nadine Scott.

Table of Contents

5 Introduction

Trends in the Commercialization and Privatization of Water

- 6 Definitions
- 6 Rationales For and Against Privatization
- 7 Historical Overview: Trends in Governance Models for the Provision of Water
- 8 Consequences of Water Privatization Trends Internationally

Current Governance: Competing Water Management Models

- 9 Public Utilities
- 9 Private Sector Participation
- 9 Public-Private Partnerships (P3s)
- 10 Community Co-operatives

Case Studies of P3s in the Water Sector

- 11 Canadian and American Experiences with P3s
- 11 New Orleans, Indianapolis, and Milwaukee, U.S.A.
- 11 Hamilton, Ontario
- 12 Halifax, Nova Scotia
- 12 Moncton, New Brunswick
- 12 First Nations Communities
- 13 Assessing North America's Experience with Public-Private Partnerships

Consequences of Water Privatization for Women and Their Health

- 14 Price Increases
- 15 Higher Disconnection Rates
- 15 Declining Water Quality and Loss of Oversight
- 17 The Turn to Bottled Water

19 Conclusions: Women and Water Privatization

20 Endnotes

21 References

Introduction

Access to clean, safe drinking water is a central determinant of health in Canada, as it is all over the world. The availability and cost of water has implications for women in Canada, both in terms of their own personal health, and because women are very often primary caretakers, responsible for the structural and health needs of their families and community. In this report, we examine contemporary pressures to move towards the privatization and commercialization of water services and delivery in Canada and evaluate the gendered health implications for women that would flow from these choices.

Why are women at a greater health risk with water privatization? In Canada, as in most parts of the world, women are the majority of water providers for their families and are responsible for obtaining safe drinking water (Kattau, 2006). Women often do the budgeting for the various household uses for water such as drinking, food preparation, farm maintenance, cleaning, and laundry. In addition, women's roles in reproduction and child-rearing mean that they often bear the primary responsibility for nourishing their children and obtaining clean water to ensure better health for their families (Kattau, 2006). Aboriginal women have long known that women, as life-givers, have a special connection with water (McGregor, 2008). Women, therefore, suffer more when "a price is put on water" (WEDO, 2003: 4). According to Welch, privatization often forces women, the bearers and providers of water, to make the choice "between clean water and cheap water" (2006: 317).

Women are often systematically excluded from the decision-making processes related to water control and are underrepresented in positions of water management. "[W]omen often have no voice in decisions about the kind of services they receive" (Brewster et al., 2006: 1). Further, "the more policy-making about water is moved from local communities" towards global or corporate structures, "the less power women have to determine who gets it and under what circumstances" (Barlow, 2008: 27). For example, no Aboriginal women were appointed to a panel established by the Government of Canada's Minister for Indian Affairs and Northern Development in 2006 to look at regulatory options for ensuring safe drinking water in First Nation communities, (McGregor, 2008). These are fundamental questions of participation in decision-making processes that affect vital interests.

Some of the issues that will be discussed include:

- the motivations behind the push towards privatization and commercialization of water;
- the debates over whether water should be privatized or held in common as an essential human resource;

- the different types of water management models;
- examples of water privatization initiatives globally and their consequences for women;
- specific examples and consequences of water privatization in Canada; and
- an examination of the gendered health risk for women, including for Aboriginal women, associated with water privatization in Canada.

Most research shows that when governments decide to enter into partnerships with the private sector for the provision of drinking water, it results in detrimental public health effects, and that women are particularly likely to be adversely affected. Women's use of water for themselves and their families is tied to their specific, gendered social and economic locations, which can lead to distinct and disproportionate effects related to their paid and unpaid work. Women are more likely, in Canadian society, to be poor than men, and are more likely to have precarious, part-time and poorly paid employment. Among women, there are many who are particularly vulnerable economically, including elderly women, women with disabilities, and First Nations women. Biologically, women may have different vulnerabilities to water quality than men, which may in turn be influenced by other health determinants including housing, exposure to environmental toxins, or poor diet.

The debate over water privatization must therefore be examined carefully with a sex-and gender-based analysis (SGBA) as many Canadian communities across the country are assessing whether their current water and wastewater systems are being run as effectively and efficiently as possible, or if new forms of governance are necessary to deal with the 21st century challenges of providing safe, clean drinking water. SGBA is required here, as it is needed in other public policy discussions in Canada, to expose existing and potential inequities.

Trends in the Commercialization and Privatization of Water

Definitions

In Europe, the term privatization is usually reserved for situations in which public enterprises are sold or transferred completely to the private sector. But privatization in North America can encompass a much wider variety of practices including:

“...any loosening of government controls, such as regulatory and spending functions...contracting-out of public services to private providers, as well as to other government agencies...public/private partnerships... the delegation of management responsibility for state-owned enterprise to private managers...and the relaxation of a state monopoly to allow private entry into market” (Ohemeng and Grant, 2008: 477).

Privatizing water can therefore involve transferring full control of water supply networks into the hands of private corporations by fully divesting assets through public flotation (i.e., when common stocks or shares are offered to the public) or through direct sales. Privatization also occurs through public-private partnership (P3). While the private sector has traditionally been involved in designing or building public infrastructure, a P3 is a 20-40 year contract with a private company to build, operate or manage, and sometimes finance publicly owned water systems. P3s are a relatively new form of privatization that began in the United Kingdom in the 1990s. All water management models will be discussed further in the next section.

Increasing private sector involvement in water supply networks all over the world has been accompanied by a rise in the application of commercial principles to water systems. **Commercializing water** means emphasizing private sector norms, which center on profit-making and maximized efficiency. This can entail the introduction of full-cost pricing, which means setting prices according to actual costs for service based on market value, and economic equity, whereby users pay according to the total amount of water consumed (Bakker, 2007).

While traditional government-run water utilities often subsidize prices for consumers in hopes of attaining social equity (i.e., people pay according to what they can afford, or all contribute to reduce costs because this is most socially beneficial), many private and publicly owned water systems today are choosing to adopt a commercial approach to water pricing (Bakker, 2007).

The Rationale For and Against Privatization

There has been great resistance to the idea of treating water as a commodity (McPherson, 2009; Standard & Poor, 2008; Luukko, 2007).¹ Proponents of privatization promote private models as being more effective and efficient methods of service delivery that can help governments and taxpayers with the “financial burdens” associated with expensive and difficult-to-maintain public services (Ohemeng and Grant, 2008). This is said to be because private corporations often have access to more economic and human resources, including “large amounts of private equity, efficient management structure, access to cutting edge technology, ability to recover the full cost of distribution, and the capacity to eliminate market distorting subsidies” (Sitaraman, 2008: 101). In Canada for instance, many First Nation communities require basic, but expensive, infrastructure for sanitation networks, pipe installations, and water distillation systems.

For some, water makes a particularly attractive commodity because “it is a basic requirement of human life, and as such there will always be a need and hence a market for it” (Whelan and White, 2005: para. 11). In this view, water is regarded as a marketable economic resource, not a common public good; and, privatization is promised as a more cost-effective model. According to Draper, “by using the marketplace, the capitalist system will set the proper value on water. Scarce resources will, consequently, be used for the ‘highest and best uses’” (2008: 493). Since private corporations are accountable primarily to their shareholders, proponents say it is in their best interests to maximize profits by creating an efficient and well-run system. This can result in lower costs, better water quality, maximized performance, and greater cost recovery for system upgrades and expansion (Bakker, 2007). Further, when water is regarded as an economic resource, it is believed that customers, forced to pay full price for usage, will reduce their water consumption and that this will lead to greater conservation of this increasingly scarce resource. Proponents contend further that the market will also help determine what the “true” price of water really is based on supply and demand, and are heavily critical of subsidizing water prices for consumers who get a “free ride” and engage in excessive consumption at the expense of the distributor (Sitaraman, 2008).

The “water as commodity” model treats water as something that can be bought and sold in the marketplace. For many, this viewpoint is antithetical to community and cultural traditions that value water

for much more than its utilitarian potential. This is especially true for many Canadian Aboriginal communities, which view water as one of the primary elements for sustaining life and who place a spiritual value on water. Aboriginal women in particular are considered the “keepers of water” (Blackstock, 2001). As water caretakers, Aboriginal women have a relationship with water that is directly tied into their physical and emotional health; they are bound to protect this natural resource from the so-called “progress” of industrialization, which has resulted in large scale pollution and a dwindling of traditional water sources (Blackstock, 2001). According to Allen, the “water as commodity” approach is an inherently patriarchal view of water that involves elements of claim and control and “clashes at a fundamental level with the perception of water as a life element and has serious implications for Aboriginal Women’s health and well-being” (2010: 9).

Moreover, those who oppose the “water as commodity” model believe that the world water shortage derives from social and structural factors – aided in large part by the actions of multinational corporations who have “converted abundance into scarcity” (Bakker, 2007: 197). According to eco-feminist scholar and activist Vandana Shiva, “re-categorizing water as private property creates the possibility of excluding others from access (to a life-sustaining element)” (quoted in Sitaraman, 2008: 103). This perspective regards water as a vital human right that is essential for the maintenance of life, and questions whether water should be owned by anyone or any corporation. As such, there is an inherent conflict between the private ownership of water and the greater public good. State or collective management is regarded as the most appropriate model and conservation is thought to be achieved best by effective environmental and social regulations.

Finally, those who favour treating water as a fundamental human right also argue that the rationale for privatizing water does not hold up. Critics claim that the profits from water sales do not come from more efficient management, but from the increased exploitation of workers, disinterest in maintaining networks, and contracts that favour the private corporation. They argue that privatization actually siphons money from the “public purse” that could be directed towards long-term investments in water infrastructure and conservation (Barlow, 2008). The end results are often deteriorating water quality and higher than necessary water prices. This is especially true when privatization is not matched with

effective government regulations that are necessary to protect the system from abuse (Bakker and Cameron, 2002).

Historical Overview: Trends in Governance Models for the Provision of Water

Water privatization is not a new phenomenon. In the 19th century, the trend changed from obtaining small amounts of water via traditional methods (i.e., wells, lakes, streams) to taking large quantities of water into treatment plants and supplying it through newly built distribution networks (Bakker, 2007). Many cities around the world like London, Paris, New York, and Toronto originally had private corporations involved in the building and/or operation of their water supply systems. However, these networks typically served the wealthy, and the poor were forced to fend for themselves by using publicly available taps, water wells, and rivers (Bakker, 2007). A lack of access to fresh and safe water created an increasingly unhealthy urban environment where the threat of disease was very real. In fact, many cities became centers for epidemics, such as cholera and typhoid, forcing their governments to rethink how best to supply their citizens with this vital resource. New York City, for example, took over the water supply network after the 1832 cholera epidemic (Varghese, 2007). A “universal” approach to water availability was adopted as governments realized that private companies were unwilling to invest in providing safe drinking water for all; public authorities took control over their water infrastructure or imposed strict regulations on the remaining private suppliers (Bakker, 2007) to promote public health.

In much of the industrialized world, the idea that water should be made universally available, affordable, and safe led to the adoption of the public utilities approach to water management for most of the 20th century. The underlying assumption in this approach is that water services are an essential resource that must be provided to all citizens (Bakker and Cameron, 2002).² Governments built, owned, and operated water and wastewater infrastructure and provided citizens with access to clean water on a subsidized basis (Bakker, 2007). The idea of treating water as a “basic need” was based on an economic philosophy which held that healthy citizens would flourish and become productive members of society

Across the globe, since the neo-liberal policies of the Thatcher-Reagan era, there has been a trend back towards privatizing water. In Canada and the United

States, inadequate funding since the 1990s has forced municipalities to turn to the private sector. It has meant that many water systems in North America today are deteriorating at a rapid pace. For example, in the US, two Environmental Protection Agency studies done in 2001 and 2002 concluded that capital investment in drinking water and wastewater infrastructure over the next 20 years should be in the area of 151 billion dollars and 331 to 450 billion dollars, respectively. The need to restructure 54,000 drinking water and 16,000 wastewater facilities over the next twenty years has not, however, been met with much government support, as continual budget cuts and an annual shortfall of 11 billion dollars has made it difficult to replace aging facilities and keep up with current and future water regulations (Varghese, 2007; Public Citizen, 2005). The Federation of Canadian Municipalities estimates the Canadian water and wastewater infrastructure deficit to be at approximately 31 billion dollars.

The Federal government now actively promotes P3s, requiring expensive investigations into the P3 option when local governments seek 50 million dollars or more from the federal Building Canada Fund.

These political and economic debates do not, for the most part, include gendered analyses of the implications of water management models for women.

Consequences of Water Privatization Trends Internationally

Latin America and East Asia began privatization efforts in the 1980s and South Africa and Asia soon followed by the 1990s. Changes in the control over water networks have been very rapid in the global south. For example, while 100 million people accessed water from private companies from 1988-1995, from 1995-1998 over 40% of all investments have come from the private sector (Varghese, 2007).

This trend towards private sector involvement in water supply networks has been fuelled in part by World Bank (WB), International Monetary Fund (IMF), and World Trade Organization (WTO) policies that encourage countries to privatize water networks in exchange for loans and funding (Whelan and White, 2005). Many southern national governments have in essence been forced to commercialize their waterworks in order to obtain vital funding from these organizations. For example, to date over 12 African countries have privatized their national water supplies and implemented full-cost pricing in order to obtain IMF loans (Whelan

and White, 2005; Welch, 2007). Unfortunately, the end results have had detrimental impacts on lower income households and particularly on women who have been overwhelmed with price hikes, water cut-offs, deteriorating water quality, and indirect appropriation of water from other essential needs (e.g., agriculture).

The developed world has not been immune to these pressures. The removal of regulatory and legislative restrictions in countries like the United States has led to a dramatic increase in private company participation since the 1990s. Over 43 states have private water companies, and almost 600 cities have entered into water contracts with private industry (Varghese, 2007). A 2005 study also showed that industry growth is expected to increase by seven percent a year to reach almost 150 billion dollars (Varghese, 2007). Varghese does not comment on or investigate how men or women may have been similarly or differentially affected by these changes in water management.

Still, despite these statistics, it appears that within the last few years, privatization efforts have begun to stall. Water management continues to remain predominantly in the public domain in North America. In Canada, sixty percent of the ten largest municipalities have government-run water supply systems and in the United States, eighty-five percent to ninety percent of Americans still get water via public networks (Bakker, 2008; Varghese, 2007). Governments are increasingly taking back control over their water and wastewater systems and there has been a reduction in the number of contracts between municipalities and private service providers (Varghese, 2007). RWE, the largest US private operator, recently stated it was getting out of the water business (Esterl, 2006). According to Food and Water Watch Executive Director Wenonah Hauter, "RWE is finding out that market conditions will never be favorable to the privatization of public water services... more people and more communities around the country are discovering that water utilities offer better services and operate more responsibly when they are publicly and locally controlled" (Mueller & Greenfield, 2008: para. 2). Other private corporations such as France's Suez and Veolia Environment have also begun scaling back in North America, as unfavourable market conditions and public protests have reduced the potential for profits. According to Debra Coy, this trend is not surprising given that "profitable investments in the water industry are in the areas of technology and equipment sales rather than ownership of resources or management of water systems" (Public Citizen, 2005: 2).

Current Governance: Competing Water Management Models

Public Utilities, Private Sector Participation and Community-Cooperatives

Bakker (2007) describes three types of water management models, each of which view the water consumer very differently. They include the public utility or municipal model, where consumers are “citizens,” the private sector (commercial) model which views consumers as “customers,” and the community co-operative model, which views consumers as “community members.”

With **public utilities**, governments build, own, and operate water networks and provide their citizens with access to water using collective resources, often gathered through progressive taxation schemes. Water management often occurs at the municipal level and water is considered a public service (Bakker, 2007: 187). Government intervention is seen as necessary because the water industry is subject to market failures. It is difficult to establish property rights because of the hydrological cycle and water systems run most effectively via monopolies, where no competition exists (Bakker, 2007). In addition, since access to clean water is necessary for basic health, governments must ensure all its citizens are provided with this public good so that they will continue to remain economically productive citizens; some countries value this for the collective good (Bakker, 2007: 187). In Canada, publicly owned municipal utilities remain the most popular model for water management (Bakker and Cameron, 2002).

Sometimes, even publicly owned utilities choose to adopt aspects of commercialization, such as creating publicly owned for-profit corporations or contracting their services to other publicly owned water supply utilities. This is often called “**corporatization**.” With corporatization, a for-profit or non-profit public utility corporation embraces private sector ideals like cost-recovery and rewarding performance targets (Clarke and McDonald, 2003). Here, a public corporation operates under corporate rather than public law. The utility has a management board and conducts itself like a private business, with the government acting much like a shareholder (Bakker and Cameron, 2002). In Ontario, many municipalities have given control over water management to the Ontario Clean Water Agency and in Alberta, Edmonton owns a corporatized utility call EPCOR.

Full privatization occurs when a private operator owns the water supply system. They are fully responsible for all aspects of the network, including investments, maintenance, operations, and tariff collections (Clarke

and McDonald, 2003). Supervision usually occurs in the form of government regulatory authorities who are responsible for ensuring that the public is protected in areas like water pricing, quality control, and meeting environmental protection standards. To date, the only real example of full privatization in the developed world has occurred in England and Wales. In 1989, ten regional waste and wastewater systems were fully privatized when the central government divested themselves of these assets via public flotation. Only one of these companies has been restructured into a non-profit entity (Bakker and Cameron, 2002). Privatization here was also accompanied by the creation of three government regulatory authorities to oversee pricing, water quality, and environmental pollution.

While very few countries have fully privatized their water systems, **public-private partnerships (P3s)** have been a popular way of including private enterprise in the water and wastewater sector. With these partnerships, owners of waste and wastewater systems often contract out aspects of water management to other private or publicly owned operations. This can include outsourcing activities like customer service, construction of facilities, maintenance, and daily operations. It is important to note that these partnerships do not include transferring ownership from the public to the private sector. Rather, the relationship between partners is time limited and can involve a wide range of “risk and responsibility sharing options” (Bakker and Cameron, 2002: 25).

Public-private partnerships can take on many different forms. Clarke and McDonald (2003) describe some of the more popular models in water management, including the Build-Own-Transfer or Build-Own-Operate-and-Transfer models, concessions, leases, or management and service contracts. Some contracts give a private operator the ability to construct and operate all or only specified aspects of a water network. Usually, the private company builds the facilities and has responsibility for areas like operations and maintenance. The company may also own the infrastructure for a limited time until it is again transferred over to the public authority. A concession contract has the concessionaire responsible for areas like investments, operations, and management, as well as tariff collection and customer service. With leasing, a private company is given a time-limited contract, which provides them with exclusive rights to the facility, as well as complete control over managing, operating, and maintaining the network.

While management contracts have the private contractor responsible for both operations and maintenance under public authority supervision, service contracts have the public authority in control over operations and maintenance, with the private corporation responsible for only specific areas of service (Clarke and McDonald, 2003). In Canada, a number of municipalities (Hamilton, Ontario; Moncton, New Brunswick; and Halifax, Nova Scotia) have at some time entered into public-private contracts, with mixed results. The next section includes an in-depth discussion of P3s in the water sector.

Many rural and sparsely populated communities have adopted an altogether different approach to water management. **Community co-operatives** are found in locations where there is little interest from both government and private enterprise. Here, communities build and run their own water networks that are managed as co-ops. Bakker defines cooperatives as “(enterprises) owned and democratically controlled by users of the goods and services provided” (2007:1 89). Users are very involved in decision-making where the goal is to provide members with effective management. There are over 200 water co-operatives in Canada, found mostly in Alberta, Manitoba, and Quebec.

Case Studies of P3s in the Water Sector

In Canada, the P3 model for water and wastewater management has been advocated by groups such as the Canadian Council for Public-Private Partnerships, Pollution Probe and other government and utility agencies (Bakker, 2007). Proponents of P3s maintain that private sector involvement can help increase efficiency by reducing costs, improving infrastructure, and providing greater customer accountability. In addition, they maintain that the private sector may often have access to experts and financial resources not available to increasingly cash-strapped governments. In contrast, opponents of the P3 model, such as the Canadian Union of Public Employees (CUPE) and the Council of Canadians, argue that such partnerships have led to higher facility costs, poorer water quality, higher fees, reduced services, unequal access to water supplies, and increased maintenance deficiencies (Roy, 2008). Overall, the North American case studies outlined below appear to justify concerns about these partnerships in the water sector.

CANADIAN AND AMERICAN EXPERIENCES WITH P3s

New Orleans, Indianapolis, and Milwaukee, USA

The case studies of New Orleans, Indianapolis, and Milwaukee in the United States highlight a myriad of difficulties associated with public-private partnerships in water and wastewater management. New Orleans' attempt to privatize both their water and wastewater networks in 2002 revealed troubles with the bidding process. For example, from the beginning, city officials found it difficult to compare bid proposals from United Water and Veolia Water because, "they were so laden with uncertainties, inadequacies, omissions and other problems" (Public Citizen, 2005: 6). In addition, Veolia, which was running the city's wastewater network at the time, received scathing reviews from a 2002 independent audit that outlined a number of violations including improper environmental discharges, pipe clogs, and other mechanical failures. Prior to Veolia, the private corporation running the wastewater system, Professional Services Group (PSG), had one executive convicted of bribery charges along with a member of the New Orleans Sewerage and Water Board. Such problems caused the city to reject all privatization bids for its water and wastewater management in 2004, but not before losing over 5 million dollars in the process (Public Citizen, 2005).

In Indianapolis, Veolia Water's 2002 contract with the city was accompanied by labour problems, including layoffs and the reduction of benefits to employees.

In January 2003, over 1 million people in the city were put on a "boil water alert" and hospitals, schools, and restaurants were told to use only bottled water. The company claimed the problem was that water had been treated incorrectly because of a mix-up with the chemicals and that this had been caused by an employee entering an incorrect value into the computer at its treatment plant. However, public outcry continued when it was revealed that the company had waited almost 12 hours to let the public know about this mishap. While there were no illnesses reported because much of the mistreated water was diverted into rivers, the mayor of the city acknowledged they were lucky as no oversight system was in place to catch such errors (Public Citizen, 2005).

The organizational system problems exhibited by the bidding process in the case of New Orleans, and the lack of public notice in the example of Indianapolis, both raise doubt that privatization would result in an "efficient and well run system" as argued by Bakker, 2007.

Milwaukee decided to contract with United Water in 1998 to operate their sewage tunnels and treatment plants. United Water was expected to help the city eliminate discharge of untreated sewage, but an independent audit showed the exact opposite happened because of the company's desire to cut costs. It was estimated that "107 million gallons of untreated wastewater was discharged into waterways from June 1999 through June 2001 because United Water Services had temporarily turned off Deep Tunnel pumps while switching to a lower-cost source of electricity" (Public Citizen 2005: 11). While similar sewage spills finally forced the city to re-open its contract with United Water and make them more accountable for such errors, United Water paid over 500,000 dollars in damages to residents who had this sewage leak into their homes (Public Citizen, 2005).

Hamilton, Ontario

Hamilton's negative experience with a public-private partnership in the water sector has been well-documented. In the 1990s, the region decided to look at private sector participation in water service delivery as a solution to problems already plaguing the industry including poor management, over-staffing, and failure to comply with provincial regulations (Ohemeng and Grant, 2008). With no competitive process, the city accepted an unsolicited proposal by Philip Environmental Group (PEG) and its subsidiary Philip Utility Management

Company (PUMC) and signed a 180 million dollar contract with them to operate the water and wastewater treatment plants, pumping stations, and reservoir on a contractual basis (Ohemeng and Grant, 2008). The contract promised many things to the city and its workers, but also stipulated that the region would have to pay for all costs over 10 thousand dollars for maintaining facilities, while another clause gave PUMC more money for additional cost-saving measures, which meant that cutting costs in areas like labour would effectively create more profits (Ohemeng and Grant, 2008).

In 1996, the central sewage treatment plant had a pumping system failure that backed up the region's main sewer system. As a result of this, hundreds of homes and businesses were flooded and over 182 million litres of raw sewage, chemicals and heavy metals were spilled into Hamilton's harbour. While PUMC at first denied responsibility, they ultimately were held responsible and over 115 people received over 2.5 million dollars in property damage compensation (Reeves, 2006). More spills (at least three serious ones) continued from 1998-1999, causing much environmental damage to the region and "...in one case, the equivalent of fifteen truckloads of sewage bubbled up through manhole covers..."(Carty 2003: para. 31).

Blame was placed on the shoulders of PUMC. The International Union of Operating Engineers claimed many of these mishaps were caused by the company's use of old, unreliable equipment and deteriorating plant conditions. A 1997 annual financial report, for example, showed PUMC had saved over 700 thousand dollars by downsizing. This included a 25 percent reduction in repairs and maintenance costs; worker lay-offs, only fuelled concerns regarding workers and the public: "when you cut staff...anything can go wrong. Privatization affected the scale of the problem" (Carty, 2003: para. 28). For the next few years, a series of takeovers saw Philips' control give way to the Azurix Corporation, American Water Services, and ultimately RWE. While the city remained opened to competitive public-private partnerships following the contract's expiration, fears over public accountability ultimately caused the Hamilton Council to decide to return water operations to municipal control (Ohemeng and Grant, 2008).

Halifax, Nova Scotia

In 2002, the city of Halifax approved a P3 agreement that would have seen a consortium of private companies, including the Suez Corporation, be responsible for

building and operating three new sewage treatment plants. However, by 2003 the Halifax Regional Council decided to withdraw from this agreement because of contractual disagreements. According to Reeves, "HRC pulled out of the agreement due to disagreements over who should bear responsibility for the quality of the effluent from the new treatment plants" (2006: 15). The Council claimed that it had made the agreement without access to all the necessary information. The Council's decision was hailed by many organizations such as CUPE and the Council of Canadians, who believed that the contract placed no accountability on Suez to meet environmental standards, which ultimately would have cost taxpayers more money. Following the dissolution of the contract, the city was given public funding to complete the project.

Moncton, New Brunswick

Moncton has, historically, suffered from constant boil water advisories due to discoloration, substandard water quality, and bad taste. In 1993, the city decided to build a new filtration plant using private money after failing to obtain either federal or provincial funding. Realizing that costs could go as high as 32 million dollars, the city opened up the bidding process and had three firm replies from water corporations. Today, residents pay high water rates that are increasing much faster than they did prior to the P3. Between 1995 and 1999 fees increased by up to seven percent each year. Rates increased 75 percent between 1999 and 2000 (Council of Canadians, CUPE 2009).

First Nation Communities

According to the Council of Canadians, private water companies are aggressively pursuing new markets in Canadian First Nation communities (2008). At the same time, the federal government is actively seeking new solutions for persistent water crises in First Nation communities and is, therefore, considering the feasibility and desirability of P3s in this context. Federal funding for water infrastructure provided through the Ministry of Indian and Northern Affairs (INAC) has been inadequate to address urgent drinking water and wastewater treatment needs of First Nation communities across the country.

The Dene National Environment and Water Summit (the "Summit") held in late 2008 provided a forum for delegations of Indigenous Peoples, Leaders, Elders, Traditional Knowledge Keepers, Experts, Participants, and Youth to discuss the environment and water-related

concerns as they relate to First Nation, Inuit, and Métis communities across Canada (AFN, 2008). The purpose of the Summit was to create an opportunity for the development of strategies and policies to deal with a number of issues around water and wastewater, including the question of privatization. As a result, the AFN passed a resolution in December 2008 to create a new Indigenous Water Commission.

In terms of drinking water and wastewater infrastructure, the AFN favours a combination of public funding and local self-control and management. In this regard, the question of privatization is critical. Some advocates believe strongly that in allowing corporations to control water services in First Nation communities through P3s, the federal government may be threatening health and local environments, community employment, and local control (Council of Canadians, 2008). As noted earlier, this could have particularly harsh implications for women.

ASSESSING NORTH AMERICA'S EXPERIENCE WITH PUBLIC-PRIVATE PARTNERSHIPS

To date, it appears that most P3s in the water sector have been relatively unsuccessful. In Canada, many of these early partnerships between cities and private corporations have not been renewed, as is the case with Hamilton. Recently, several Canadian communities, including Vancouver and York Region in Ontario, chose to reject this model in favour of municipally-run water and wastewater systems (Crawley, 2003; Globe & Mail, 2003). As demonstrated, the primary reasons for P3 failures in water management include the failure to ensure enough competition for contracts, inaccurate information, resulting in poor contract design, corruption, inadequacies in delineating or allocating risks, and public sector failure to monitor or enforce contracts (see also Reeves, 2006). Currently, there is also no regulatory framework for Canadian public-private partnerships as everything is regulated via contract (Bakker, 2007). Each of the case studies examined above highlights these problems, which are commonly associated with the P3 model in water and wastewater management in North America.

Not surprisingly, most of the analysis and critique of P3s is not discussed in terms of different and gender-specific implications for women. Nevertheless, there are implications that can be drawn from existing research. The gendered health implications of moves towards privatization and commercialization of water systems are considered in the next section of this report.

Consequences of Water Privatization for Women and Their Health

Generally, privatizing water appears to be detrimental to human health and to the health of women in particular. According to Barlow, “women carry out 80 percent of water-related work throughout the world and therefore carry the greatest burden of water inequity” (2008: 27). In Aboriginal traditions, water “...has cleansing and purifying powers...the giver of life with which babies are born...has tremendous significance before birth, during the birthing process and after birth” (McGregor, 2008).

In most parts of the world, women’s work is integrally linked with water. Women cook most of the food, work that requires water both for hand-washing and for preparation. Women provide most of the care for and instruction to children, with water again needed for cleaning and bathing. Women do most of the household cleaning, using water as an essential ingredient in making households safe. Women also do most of the unpaid elder care, another job that requires water all day, every day. In higher income countries, this unpaid work is often paralleled by their paid employment. While managers and employers bear some of the responsibility for controlling water use, much of the responsibility can be shifted to, or directly felt by, women.

As the more poorly paid of the two sexes, women bear the impact of increases in water costs. An increase in water prices in many parts of the world has led to higher disconnection rates and higher levels of water-related diseases. In addition, privatization is often accompanied by infrastructure neglect, labour cutbacks and a decline in regulatory oversight – often resulting in threats to water quality. Water privatization may also have an adverse effect on public health – again, an area dominated by women – if it leads to a decline in maintaining optimal water quality standards with respect to chemical parameters, for example. The increased use of bottled water that often accompanies an insecure water supply must also be examined in relation to long-term chronic health risks, cost, and political control. Finally, analyzing the relationship between water privatization and health is important for shedding light on the continued problems facing Canadian Aboriginal communities and their long battle with access to safe drinking water.

Fry et al (2008) have discussed women’s “water stress”, describing the very difficult choices women have to make in some jurisdictions where cost and management issues force women to assess their basic water needs in the context of additional concerns about waste removal and keeping water reservoir standards high.

Price Increases

As we have seen, privatization usually leads to an increase in water costs for users. Dramatically increased costs are a disproportionate burden for women because women are more likely to be poorer than men, and more women lead poor households. Thus, high water costs can lead to greater water poverty (i.e., being denied access to dependable water resources or not having the means to pay for available ones) for low income families who are often forced to choose between the basic necessities of life such as food versus water. In the case of Moncton, for example, it was noted that water rates have climbed steadily since privatization.

Nowhere have water price increases been more thoroughly examined than in the UK. After water was fully privatized in the UK in 1989, water prices significantly increased – 46 percent in the first year alone (Dore, Kushner & Zumar, 2004). In 1994, for example, almost two million British households had defaulted on their water bills, and over a million others were behind in payments (Bakker, 2001). Low income families were disproportionately affected. One study showed that by 1996, some households were putting four percent of their weekly budget towards water costs, while the national average was only one percent (Bakker, 2001). Another survey concluded that water debt was growing faster than any other type of debt for low income families and that three-quarters of households on social support had difficulty paying their water bills (Bakker, 2001). By 1999, Ofwat, the country’s water services regulator, stated prices should drop by at least 12.3 percent. A National Consumer Council Report charged that water companies were deliberately overestimating capital costs so that they could increase their prices and provide additional profits to shareholders (Dore, Kushner & Zumar, 2004). Although we do not have any data on the gender breakdown of the impact of price increases, it is safe to assume that women were disproportionately affected, since in the UK, as elsewhere, women are more likely to be poor.

At home, as elsewhere, price increases that come with privatization are most likely to disproportionately affect

low income households. In Canada, more women live in poverty than men. Women make less money in their paid jobs and are more likely to work in one or more part-time jobs. In part-time jobs, women are less likely to have additional employment benefits to augment their income (Donner et al., among others). Elderly women who live alone are among the poorest women in Canada, as are Aboriginal women and women with disabilities. In fact, Aboriginal women are amongst the poorest of all individuals in the country, with a poverty rate in 2000 of 36 percent, and are the most likely to be raising children on their own (Statistics Canada, 2005). The Canadian Institute for Health Information suggests that not only do women have lower incomes than men and make up the majority of Canada's poor, this is linked to an increased reporting of chronic health conditions by women (CIHI, 2008).

Higher Disconnection Rates

A consequence of higher water costs is higher rates of disconnection from basic water services. A subsequent lack of access to the water supply can increase the number of water-related illnesses in a population. In the UK, a British Medical Association study done after water privatization also suggested that increased disconnection rates would put households and local communities at great risk for water-related illnesses as water is an essential element that disrupts disease transmission cycles (Lancet, 1994). Research showed a relationship between increased water disconnection rates and more reports of dysentery and hepatitis A in the country (Fehr et al., 2003; Lancet, 1994). This was especially true for lower income households, larger families, and those suffering from medical conditions requiring water usage (Bakker and Cameron, 2002). Negative publicity and public outrage ultimately led to the Water Industry Act in 1999, which prohibited the disconnection of water to domestic consumers and banned water limiting devices (Bakker, 2001). Again, it is women who are disproportionately poor and it is mainly women who have to find alternative means to get food on the table, and clothes, hands, and bodies washed without water. Draper (2008) comments on how commodified water means setting priorities for water use: drinking water first, then food preparation, followed by bathing and laundering. What does this mean for women?

In 2001, the City of Detroit cut off water to almost 42,000 residents who were unable to pay their water bills, disproportionately hurting seniors, people with

disabilities, and resulting in some cases in the removal of children from homes by Social Services because they no longer had access to safe water (Barlow, 2008). Mothers lose their children not because they do not care, but because they cannot afford to care.

Health problems associated with water cut-offs through disconnection are not dissimilar to the problems facing many Aboriginal communities who, for years, have been disconnected from any kind of safe water supply. In 1995, Health Canada and the Department of Indian and Northern Affairs reported that 25 percent of reserve water systems posed a health risk to their communities (Office of the Auditor General of Canada, 2005). Currently, there are still 85 high risk drinking water systems in First Nation communities and over 90 First Nation reserves continue to have boiled water advisories or "do not consume" orders that in some cases have existed for years (Eggertson, 2008). In Northern Ontario for example, the Kashechewan First Nation faced evacuation after it was discovered their water supply was dangerously unsafe and was causing a variety of skin diseases (Polaris Institute, 2008). What is more troubling here is that this community had been under a "boil water advisory" for over nine years (Eggertson, 2008). Faced with rising costs, women are more likely to bear the burden of higher discontinuation rates.

Declining Water Quality and Loss of Oversight

Transferring water management to the private sector is often accompanied by cost-cutting measures in areas such as labour and maintenance. In 1999, the city of Atlanta entered into a water privatization contract with United Water Services Atlanta (UWSA), another subsidiary of the Suez Corporation. The impetus to privatize came from the city's financial inability to fix the existing water system including maintenance upkeep and replacing old infrastructure. The contract gave UWSA responsibility in areas such as treatment plant operations, delivering water to wastewater facilities, monitoring, setting rates, billing and customer service, and infrastructure improvements (Reeves, 2006). Although the original contract was to last 20 years, the city terminated its relationship with UWSA after only four years in 2003. From the beginning, UWSA was criticized for failing to put money back into water infrastructure. The company in turn claimed that they had been unaware of just how much it would cost to repair the city's water meters and hydrants and as a result asked the city for over 80 million dollars above the original contract, which resulted in a subsequent

government scandal involving the mayor (Public Citizen, 2005). UWSA also cut the number of employees from 700 to 300, reduced training time to levels below contract requirements, and improperly billed the city by citing routine maintenance costs as capital costs and by having UW employees work on projects outside the Atlanta area (Public Citizen, 2005).

Not only did this myriad of problems lead to a million dollar task force study that highlighted irregularities with bill collection, meter installations, and poor maintenance, Atlanta citizens also suffered health effects from deteriorating water quality and increased fears over water safety while seeing their rates go up every year (Jehl, 2003). According to Lee Morris, a former member of Atlanta's city council, "in my old councilor district particularly there have been a dozen or more instances where people had brown water running through their faucets and advisories to boil it before you drink it. In a large world-class city like Atlanta, that just should not happen" (Foller, 2003: para. 10). Equally disconcerting is the fact that such advisories often took a day or two to reach citizens who were then told the water was unsafe for use in baby formulas, for the elderly, and for the sick (Foller, 2003). As women are overwhelmingly the caregivers for infants and for the sick and frail, these developments would affect them doubly and trebly, as they would be caring for the health of others as well as for themselves. Moreover, pregnant women may be particularly vulnerable, especially in ways that have implications for the fetus they carry.

The case of Walkerton, Ontario also shows what can happen when aspects of water management are privatized without effective monitoring regulations. In 2000, an *E. coli* and *Campylobacter jejuni* infestation in Walkerton's water supply resulted in seven deaths and 2,700 poisonings. According to Justice Dennis O'Connor, the Walkerton tragedy was attributed in part to the fact that Walkerton had begun privatizing water testing. In 1996, Ontario's provincial government introduced budgetary cutbacks that led to a decline in government laboratory testing services for municipalities and opened the door to private contracts for water testing (O'Connor, 2002). Instead of Walkerton using water specialists to collect and test water supplies in government operated laboratories, these tests were done by the privately run enterprise A&L Laboratories Canada East, a firm that, through an Ontario regulatory loophole, was allowed to conduct bacteria tests in Ontario although it was not accredited to do so in

Canada (Prudham, 2004). Although A&L Labs had found traces of *E. coli* contamination in Walkerton's water supply and did report it to the town's public utilities commission, they were not required, and therefore did not, provide this information to either the Ministry of Environment or regional medical health officer. According to O'Connor,

When government laboratories conducted all of the routine drinking water tests for municipal water systems throughout the province, it was acceptable to keep the notification protocol in the form of a guideline...rather than in a legally enforceable form...However, the entry of private laboratories into this sensitive public health area...1996, made it unacceptable to let the notification protocol remain in the form of a legally unenforceable guideline. This was particularly so since at the time, private environmental labs were not regulated by the government. No criteria had been established to govern the quality of testing, no requirements existed regarding the qualifications or experience of laboratory personnel, and no provisions were made for licensing, inspection, or auditing by the government. (2002: 31).

It is widely acknowledged that the Walkerton tragedy was caused by a confluence of factors, a crucial one of which was privatization and the attendant lack of regulatory oversight. We know as well that it is women who end up taking the main responsibility for those made ill by the water, even if more of the victims are men.

These examples illustrate the health and economic risks that occur with failure to invest in and maintain a good water supply infrastructure. What does this mean for many Aboriginal communities in Canada that currently lack the proper waste and wastewater infrastructure and that appear to be adversely impacted by a governance gap in water management? Many "boil water advisories" and "do not consume" orders in First Nation communities have been a direct result of crumbling infrastructure, equipment malfunctions, and a lack of adequately trained and certified water system operators – all of which result in inadequate water quality. The examples illustrated above show it is more likely than not that privatization will only exacerbate this situation. In addition, even when new facilities are constructed, a lack of proper consultation with Aboriginal authorities can result in problems. For example, in 2003, one First Nation community rejected and did not use a newly built, four million dollar facility because of concerns about the water source and the design of the treatment plant (Office of the Auditor

General of Canada, 2005). Also, studies that have examined drinking water in First Nation communities highlight the lack of accountability for maintaining water infrastructure as it is “not clear who is ultimately responsible for the safety of drinking water” (Office of the Auditor General of Canada, 2005: 5). The ambiguity surrounding jurisdictional authority over First Nation water supplies clearly makes it an arena that can only increase the problems that come with water privatization.

On top of insecure water quality, privatization may bring deterioration in future water supplies because of a failure by the private sector to invest in source water protection. For example, a study done by Fehr et al. (2003) concluded that while many drinking water supplies in industrialized countries currently achieve standards that meet or exceed legal requirements for chemical parameters, increased privatization in the water sector may result in higher contaminant levels in drinking water, as companies may find it unnecessary and have no incentive to “over-fulfill” the legal requirements. Thus, while private companies might meet government standards, the study states that privatization poses a health risk as even the slightest increase in exposure to chemical parameters such as arsenic or lead may result in increased cancer rates – even where these levels of exposure are within legal boundaries (Fehr et al., 2003). What the consequences are in relation to gender still remains an important question. For example, do breast cancer rates increase? What is the impact on a fetus? Are children home from school more? There are many questions here with critical consequences for social and economic policy.

In fact, a recent study conducted by the National Network on Environments and Women’s Health³ has demonstrated that Canadians are receiving chronic low-dose exposures to multiple chemicals through their drinking water and that these exposures may cause subtle but important health effects, especially for women. Epidemiological studies of low-dose exposures to chemical contaminants increasingly point to critical windows of vulnerability, based on developmental and reproductive phases, which are distinctly gendered in nature. Research also suggests that exposure to, susceptibility to, and absorption of certain contaminants may be influenced by sex and gender in a number of important ways.

The study further notes a worrisome trend: in several remote and northern communities in Canada, concentrations of contaminants like heavy metals are

increasing in surface waters, even while they remain below the “maximum allowable concentrations” according to federal drinking water guidelines in the treated drinking water supplies. If private operators were to take control of these services, in the context of non-binding federal “guidelines” for the chemical contaminants, there would be no incentive for those operators to continue to maintain low levels of the contaminants in the treated water, nor would there be any incentive for them (nor the jurisdictional mandate) to take proactive measures that would preserve the source waters for generations to come.

The disproportionate burden experienced by First Nation reserves in terms of boil water advisories for drinking water has already been discussed. But many reserves will also face disproportionate pollution burdens with respect to surface water contamination by heavy industry. Akii Kwe, an Aboriginal women’s group on Walpole Island First Nation, are one of several similar groups that have actively protested the proposed actions by industry (in their case, by Imperial Chemical Industries) in the further contamination of their waters. Similarly, Anishnaabe women intent on protecting the pristine waters of the Alliston Aquifer (Site 41) have led and maintained a steady vigil at personal risk to their own safety.⁴

Thus, while all Canadian women are susceptible to long-term health harms from low-dose exposures to contaminants in their drinking water, it is clear that some women, in some communities, are more directly threatened.

The Turn to Bottled Water

In April 2008, the Canadian Medical Association Journal reported that there were 1,766 boil water advisories in place across the country, not including First Nation communities. Where public water is not accessible, communities often turn to bottled water. Yet bottled water is often far more expensive than regular tap water and is often not tested as rigorously as tap water. For instance, the price mark-up on bottled water can range from 240 to 10,000 times the original price of production (Clarke, 2005). In addition, 25 percent of bottled water consumed in Canada is in fact filtered tap water that is often directly taken from municipal systems or obtained from groundwater supplies that are not as well regulated as surface waters (Clarke, 2005).

It is also important to note that in Canada bottled water is not as well-regulated or as well-tested as tap water. For example, in Toronto, Ontario, municipal water is tested for 160 contaminants; the standards for bottled water call for the testing of less than a half dozen (Kingston, 2007). Toronto also performs over 650 bacterial tests on city water; it is unclear how many bacterial tests are done for bottled water. Recent studies by the National Resources Defense Council (1999) and the Environmental Working Group (2008) have highlighted many inadequacies associated with bottle water testing. In March 2004, over 50,000 bottles of Dasani water were taken off the shelves in the UK after testing positive for high bromate levels and in March 2007, the Canadian Food Inspection Agency (CFIA) warned consumers not to purchase Jermuk Classic Brand Natural Sparkling Mineral Water because of excessive levels of arsenic (Kingston, 2007).

Not only is water quality an issue, but the safety of the actual bottles themselves has also been questioned. In particular, polyethylene terephthalate (PET) is a chemical often found in water bottles; a recent study showed that after six months in storage, large levels of the toxic chemical antimony had leached into the water itself (Kingston, 2007).

The environmental consequences of this cannot be underestimated. Not only does the bottled water industry consume massive amounts of fossil fuels in the transport of water to the consumer, there is also the question of disposal of the plastic bottles. Globally, fewer than 5 percent of water bottles are recycled (Barlow, 2008), which means that they eventually end up in landfills where they very slowly breakdown and eventually contaminate groundwater, presenting further threats to drinking water.

Conclusions: Women and Water Privatization

Why are women at a greater health risk with water privatization?

As we have seen in this manuscript, some of the expected outcomes of privatization initiatives include price increases and higher disconnection rates. As a result, lower income households suffer the most with water privatization. Women – especially Aboriginal women – who are more often the heads of lower income households, are disproportionately represented in this group, finding themselves making difficult choices about where money is spent, having to choose among food, shelter, and safe water.

Further, other expected impacts include a decline in water quality, which may bring health consequences associated with bacteriological contamination, or could increase low-dose exposures to chemical contaminants. Even small increases in exposure to chemical parameters in drinking water are associated with chronic health effects when they occur in critical windows of vulnerability based on developmental and reproductive phases. These are distinctly gendered in nature. Research also suggests that exposure to, susceptibility to, and absorption of certain contaminants may be influenced by sex and gender in a number of important ways.

Further possible consequences of water privatization with significance for women include a contraction of the public sector workforce, a turn to bottled water, and a loss of democratic control over issues related to water governance.

Here in Canada, perhaps the most important consideration is that women tend to make up a large percentage of low income households, and privatizing water, which can lead to consumer price hikes, more disconnections from the water supply, poorer water quality, and increased health risks will disproportionately impact women in a negative way. Faced with no choice, poor women “may be forced to use contaminated water that they get for free rather than clean water, which they cannot afford” (Brewster et al, 2006: 14). It is no wonder then, that studies have shown that water-borne diseases (i.e. diarrhea, cholera, etc...) are more likely to affect low income households than higher income ones (Brewster et al, 2006).

“Women bear the greatest burden when it comes to inappropriate technologies or inadequate access to safe water and adequate sanitation” (Brewster et al., 2006: 1). Women are often forced to choose among the basic necessities of life for themselves and their families, for example, using money to obtain adequate food, clothing, health care, or education instead of for safe water. These types of decisions are very stressful and not only create new physical, emotional, and psychological health problems, but also exacerbate

existing conditions. Providing bottled water to women as an alternative is clearly not the solution, as we have already outlined the extraordinary expense of this product whose safety is questionable.

Aboriginal women are amongst the poorest of all women in Canada and their fertility rates are much higher than those of non-Aboriginal women (2.6 children versus 1.5 children) (Statistics Canada, 2007). Yet given the vast number of “boil water advisories” and “do not consume” orders still plaguing many First Nation communities, they are least likely to have access to clean drinking water. Here, privatization in the form of using bottled water will likely only add to their poverty, and fails to address Aboriginal women’s fundamental spiritual connection with clean water. This is compounded by the fact that Aboriginal people often lack sovereignty over their own water sources and have often seen the closure of their water sources by government or the overuse and contamination of water sources due to industrialization (Brewster et al., 2006).

Increasing private sector participation in water service delivery reflects trends in other sectors (Morgan 2006). While investment levels that skyrocketed in the 1990s have since peaked, governments continue to incorporate the private sector as a key partner in governance arrangements for water. Privatization of water leads to resources being drawn from public hands into private hands, which inevitably means a decline in resources available for investment in the long-term protection of water sources and water quality. It favours “short-term profits over long-term stewardship” (Barlow, 2008). Private water operators have incentives to shift health and safety risks onto residents and onto future generations of water consumers. Importantly, privatization also brings new limits on public participation, as structures of representation and accountability that typically characterize public authorities are absent: “private decision-making supplants open procedures of democratic polity” (Barlow, 2008: 4).

Endnotes

Aboriginal people have both an historical and contemporary role in relation to protecting water. The essence of this discussion is best summed up by them:

“Water finds significance in the lives of First Nations people on personal, community, clan, national and spiritual levels. Whatever the level at which it is considered, water is understood as a living force which must be protected and nurtured; it is not a commodity to be bought and sold.” (McGregor, 2008b)

- 1 Ian McPherson, *Criterion Investment Fund: Why Portfolios are Thirsty for Water: A Presentation at Investing in Water Workshop: Centre for the Environment* (Toronto: University of Toronto, May 26, 2009). For further reading on water as a commodity please refer to: R. Luukko, “Two mutual funds now specialize in water businesses” June 16, 2007, online: Toronto Star Newspaper <<http://www.thestar.com/article/226058>>; J. McWhinney, “Water: The Ultimate Commodity,” online: Investopedia: A Forbes Digital Company <<http://www.investopedia.com/articles/06/Water.asp>>; S&P – “Global Water Index: Index Methodology,” September, 2008, online: <http://www2.standardandpoors.com/spf/pdf/index/SP_Global_Water_Index_Methodology_Web.pdf>.
- 2 So contentious is this point that as recently as March 2009, at the United Nations meetings coinciding with the World Water Forum, Canada, Russia, and the United States refused to support a declaration that would recognize water as a basic human right. L. Diebel (2008) Canada foils UN water plan. Toronto Star. Available: <http://www.thestar.com/News/Canada/article_le/409003>
- 3 “Women and Water in Canada: The Gendered Health Effects of Chronic Low-Dose Exposures to Chemicals in Drinking Water”, 2009.
- 4 For history and updates on the Site 41 fight, see <<http://stopdumpsite41.ca/>>

References

- Anon. (1994). No Need for a Dry Run. *The Lancet*, 344 (8914): 1-2.
- Anon. (2003). Don't Tap Into the Private Sector. *Globe and Mail*. Feb 16: A17.
- Assembly of First Nations (AFN). (2008). *Resolution no. 50*. Online: <http://www.afn.ca/article.asp?id=4428>
- Allen, J. (Forthcoming 2010). *Literature Review: Aboriginal Women and Water*. Toronto: National Network on Environments and Women's Health.
- Bakker, K. (2001). Paying for Water: Water Pricing and Equity in England and Wales. *Transactions of the Institute of British Geographers NS*, 26: 143-164.
- Bakker, K. (2003). Liquid Assets: How We Provide Water Depends on Whether we View Water as a Commodity or as a Public Good. *Alternatives Journal*, 29(2): 17-22.
- Bakker, K. (2007). Commons or Commodity? The Debate over Private Sector Involvement in Water Supply. In K. Baker (Ed.) *Eau Canada: The Future of Canada's Water*. Vancouver: UBC Press.
- Bakker, K., & Cameron, D. (2002). *Setting a Direction in Hamilton: Good Governance in Municipal Restructuring of Water and Wastewater Services in Canada* (Working Paper No. 1). Toronto: Munk Centre for International Studies.
- Barlow, M. (2008) *Our Water Commons: Toward a new Freshwater Narrative*. Ottawa: The Council of Canadians. Online: <http://www.canadians.org/water/publications/watercommons/water%20commons%20-%20web.pdf>
- Blackstock, M. (2001). Water: A First Nations' Spiritual and Ecological Perspective. *Perspectives: B.C. Journal of Ecosystems and Management*, 1(1): 1-14.
- Brewster, M. et. al. (2006). A Gender Perspective on Water Resources and Sanitation. *Wagadu*, 3: 1-23.
- Office of the Auditor General of Canada. (2005). *Report of the Commissioner of the Environment and Sustainable Development. Drinking Water in First Nation Communities*. Ottawa: Minister of Public Works and Government Services Canada.
- Government of Canada. (2006). *Report of the Expert Panel on Safe Drinking Water for First Nations – Volume 1*. Minister of Public Works and Government Services Canada.
- Canadian Institute for Health Information. (2008). *Reducing Gaps in Health: A Focus on Socio-Economic Status in Urban Canada*. Ottawa, CIHI.
- Carty, B. (2003). "Hard Water: the Uphill Campaign to Privatize Canada's Waterworks." The Centre for Public Integrity. Online: <http://projects.publicintegrity.org/water/report.aspx?aid=58>
- Chillibeck, John (2008) "Water, water everywhere." *Telegraph Journal*. July 5. online.
- Clarke, Tony & McDonald, David (2003) "Water Privateers." *Alternatives Journal*. Spring 2003: 10-16.
- Clarke, Tony (2005) *Inside the Bottle – an Expose of the Bottled Water Industry*. Polaris Institute Report.
- Council of Canadians (2008). *Safe water for First Nations*. Online: http://www.canadians.org/water/issues/First_Nations/index.html
- Crawley, Ron (2003). "Public Water: the Canadian Union of Public Employees has been Leading the Fight Against the Privatization of Municipal Water Services in Canada." *Alternatives Journal*. 29.2 Spring: 16-17.
- Dore, Mohammed, Kushner, Joseph. & Zumar, Kleman (2004) "Privatization of Water in the UK and France: What Can We Learn?" *Utilities Policy*, 12: 41-50.
- Draper, Stephen (2008). "Limits to Water Privatization." *Journal of Water Resources Planning and Management*. Volume 134, No. 6, Nov/Dec: 493-503.
- Eggertson, Laura. "Despite federal promises, First Nations' water problems persist." *Canadian Medical Association Journal*. April 8, 2008, Vol. 178, No. 8: 985.
- Environmental Working Group (2008). *Bottled Water Quality Investigation: 10 Major Brands, 38 Pollutants*. Oct. 15. online.
- Esterl, Mike (2006). "Great Expectations for Private Water Fail to Pan Out." *Wall Street Journal*, June 26: A1.
- Fehr, R., et al. (2003). "Towards Health Impact Assessment of Drinking Water Privatization – the Example of Waterborne Carcinogens in North Rhine-Westphalia." *Bulletin of the World Health Organization*, June: 408-415.
- Fry, Lauren M. et al (2008). "Water & non-water-related challenges of achieving global sanitation coverage". *Environmental Science & Technology*, 42: 4298-4304.
- Jehl, Douglas (2003). "As cities move to privatize water, Atlanta steps back." *New York Times*. Feb. 10. online.
- Kattau, Colleen (2006). Women, Water and the Reclamation of the Feminine. *Wagadu*. Vol. 3, Spring: 114-142.
- Kingston, Anne (2007). "Green report: its not so cool." *Macleans Magazine*. May 14. online.
- Koller, Frank (2003). "No Silver Bullet: Water Privatization in Atlanta, Georgia – a cautionary tale." *CBC News*. Online.
- McGregor, Deborah (2008b). "Water Quality in the Province of Ontario: An Aboriginal Traditional Knowledge Perspective", Hermon, Ella (dir.). 2008. *L'eau comme patrimoine : De la Méditerranée à l'Amérique du Nord*. PUL.
- McGregor, Deborah (2008). "Anishnaabe-Kwe, Traditional Knowledge, and Water Protection", *Canadian Woman Studies* Vol 26, Nos 3,4: 26-30.
- Morgan, Bronwen (2006). "Turning Off the Tap: Urban Water Service Delivery and Global Administrative Law" 17 *European Journal of International Law* 1.
- Mueller, Jennifer & Greenfield, Erin (2008). "RWE unloads American Water on Wall Street Cheaper than Expected." *Food and Water Watch*. Online.
- Natural Resources Defense Council (1999). *Bottled Water: Pure Drink or Pure Hype*. March 1999. online.
- O'Connor, D.R. (2002). *Report of the Walkerton Inquiry: The Events of May 2000 and Related Issues*. Ontario Ministry of the Attorney General, Toronto.

- Ohemeng, Frank & Grant, John (2008). "When Markets Fail to Deliver: an Examination of the Privatization and De-privatization of Waste and Wastewater Services Delivery in Hamilton." *Canadian Public Administration*, 51.3 Sept: 475-500.
- Polaris Institute (2008). *Boiling Point: Six Community Profiles of the Water Crisis facing First Nations within Canada*.
- Prudham, Scott (2004). "Poisoning the Well: Neoliberalism and the Contamination of Municipal Water in Walkerton." *Geoforum*, 35: 343-359.
- Public Citizen (2005). *Waves of Regret, A Special Report by Public Citizen's Water for All Program*. June.
- Reeves, Eoin (2006). "Public Private Partnerships in the Water and Wastewater Sector: an Economic Analysis. September. Online.
- Roy, Louis (2008). "Improving State Capacity Building – the P3 Paradox." Presentation given at the OCDE Seminar on Public Private Partnerships, Zurich, Feb. 21-22.
- Singh, Nandita et. al. (2004). "Women and Modern Domestic Water Supply Systems: Need for a Holistic Perspective." *Water Resources Management*. Vol. 18: 237-248.
- Sitaraman, Srinii (2008). "Privatization, Efficiency, Gender, Development and Inequality: Transnational Conflicts Over Access to Water and Sanitation." *Human Rights and Human Welfare*. 8: 91-113.
- Statistics Canada (2005). *Women in Canada 2005: A Gender-Based Statistical Report*.
- Statistics Canada (2007). *Aboriginal Peoples*.
- Varghese, Shiney (2007). *Privatizing US Water. Institute for Agricultural and Trade Policy*. July.
- Welch, Rachel (2007). "And Not a Drop to Drink: Water Privatization, Pseudo-Sovereignty and the Female Burden." *Tulane Journal of International and Comparative Law*. 15: 311-333.
- Whelan, Jessica & White, Rob (2005). "Does Privatizing Water Make Us Sick?" *Health Sociology Review*, 14.2, October: 135-145.
- Women's Environmental and Development Organization (2003). *Diverting the Flow: A Resource Guide to Gender, Rights and Water Privatization*.



National Network on
Environments and Women's Health

Réseau pancanadien sur la santé
des femmes et le milieu

www.womenandwater.ca

