

Water as a strategic international resource: The new water wars

Draft chapter, Anil Naidoo & Adam Davidson-Harden (Nov. 9, 2005)

Introduction

With human pressure concerning use of global freshwater at levels unprecedented in our history as a species, the implication of water in contemporary strategic conflicts and struggles has begun to take a decisive hold on humanity. Water's crucial position as a facilitator not only of human sustenance through drinking water as well as agriculture, but also industrial development across all sectors ensures its position as a critical global resource in perpetuity. While it has been noted by various researchers that access and control of freshwater has been a declining cause of inter-state conflicts – and particularly acutely violent inter-state conflicts – over the latter part of the 20th century, the growth of water's implication in intra-state conflict dynamics in the latter part of the 20th century arguably points toward the future terrain of water and conflict for the 21st century. With the world's population expected to rise by 3 billion to over 9 billion by 2050, and with the bulk of this growth expected to be concentrated in Asia and Africa, it is inevitable that 'water stress' or pressure on some of the most critically-pressured global water basins will increase, especially as less developed countries continue to industrialize and more developed countries continue unsustainable abuse of their water resources. In addition, humankind remains at a crucial impasse in our ability to collectively ensure adequate access to water as a fundamental necessity for thriving human life, a fact attested to throughout this book. This is directly related to our collective unwillingness to protect our water sources and institute sustainable water management practices. While continual efforts have been promoted aiming at defining international co-operation and goals around increasing critical access to water (with the Millennium Development Goals being a recent example), humanity lacks an explicit and effective international legal instrument for ensuring universal access to safe drinking water as a human right. Even the UN Declaration of Human Rights does not explicitly mention water, a fact probably attributable to the relative lack of concern about the issue in contrast to the current global crisis. During the drafting sixty years ago, our water was not under the same pressure it is today; increasingly polluted, diverted and under near-constant threat to be privatized and

commodified. An alarming trend that must also be explored, but not in the limited context of this chapter, is the increasing trend towards private control of groundwater and upstream sources of water. This will have great implications for future water security and ultimately water conflict.

Two critical dynamics are central to any understanding of water as a strategic international resource in contemporary global politics: these are the geopolitics of inter- and intra-state issues concerning the control of water, and secondly the critical struggle between the definition of water as a fundamental human right or as a commodity, to be bought and sold as any other. This chapter seeks to highlight some cases of contemporary conflict touching upon these two central themes, as well as press for the adoption of a forceful and binding international treaty on the right to water as a critical means of addressing the global water crisis that faces humanity in these trends.

Some context on the global politics of water

'Hydropolitics' have evolved in a constant and worsening global scenario of lack of equitable access to water for human sustenance and sanitation. The statistics are sobering: while the global population has increased by a factor of three over the 20th century, our collective thirst has grown by a factor of six. More than 1 billion today lack access to safe drinking water, and an estimated 2 ½ billion lack access to proper sanitation. Further, it is estimated that from 14 to 30 000 people die daily from preventable water-related illnesses, a figure that works out to nearly 5 million yearly, most of whom are children¹. These facts are attested to within a context of severe inequity of access: a recent report documents that while the average U.S. citizen consumes 250-300 litres of water per day, the average Somalian citizen by contrast consumes only 9 litres per day.²

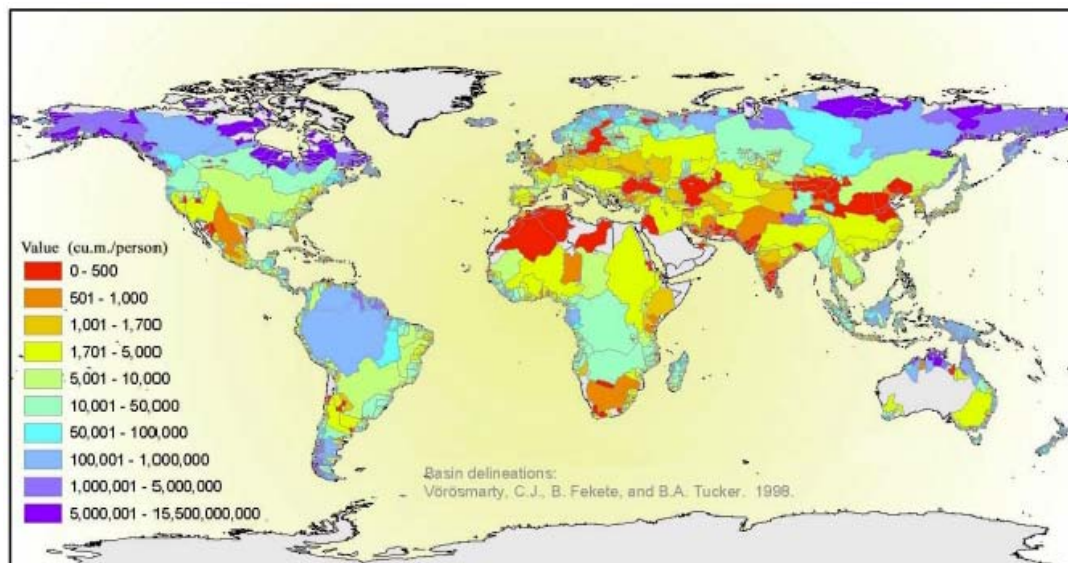
In this context, research looking at the role of water in global conflicts has acknowledged two contradictory pressures arising in recent times concerning the growing human dependency

¹ SCANLON, John, CASSAR, Angela, and NEMES, Noémi. **Water as a human right?** Cambridge (U.K.), International Union for the Conservation of Nature and Natural Resources (IUCN), Environmental Law Programme, 2004, p. 1.; BÄR, Rosemarie. **Why we need an international water convention.** Berne, Swiss Coalition of Development Organizations, 2004, p. 4; Friends of the Earth International (FOEI). **Water justice for all: Global and local resistance to the control and commodification of water.** Amsterdam, FOEI, 2003, p. 9

² FOEI, op cit., 2003, p. 4.

on readily-available global freshwater resources. While some researchers emphasize the trend toward more co-operation among states with shared ‘transboundary’ waters³, other researchers highlight the growing dilemma of changes in demographics and pressure on critical freshwater basins. Postel⁴, for instance, draws on the work of previous researchers in illustrating the notion of ‘basins at risk’ as a means of identifying areas of the world where pressure on use of water per capita cannot keep pace with population growth trends. As represented in Figure 1, the planet can be divided into regions/basins yielding more or less water on a per capita basis. Figure 2 represents ‘basins at risk’ through a comparison of expected population trends with stress on available freshwater supply in these areas.

Figure 1: Renewable freshwater per capita by river basin⁵

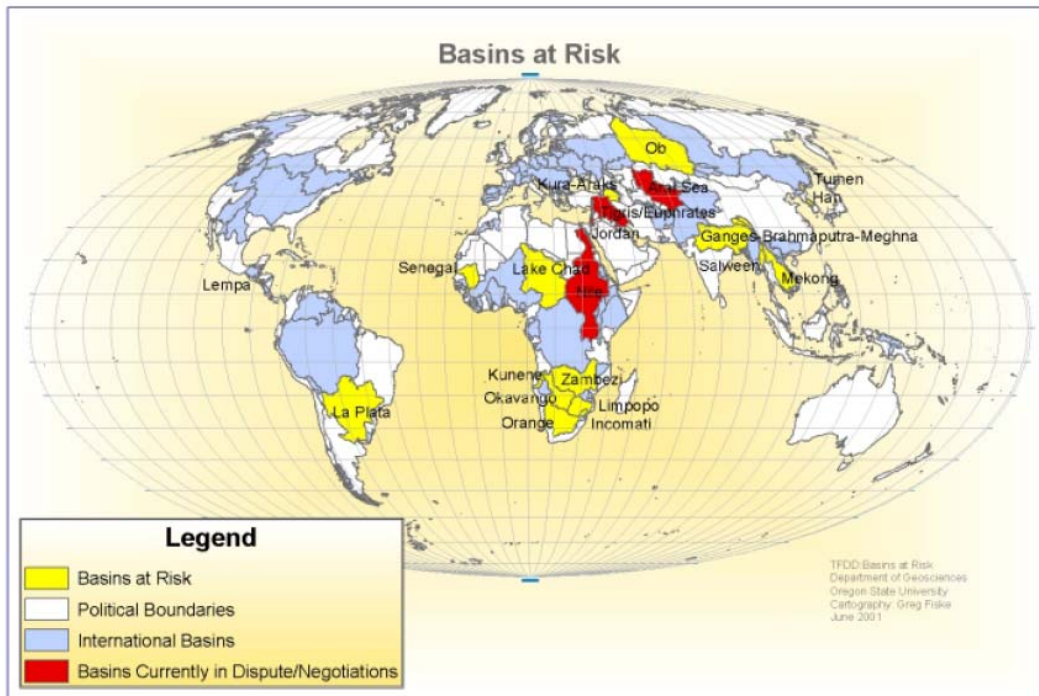


³ WOLF, Aaron, STAHL, Kerstin, and MACOMBER, Marcia. **Conflict and cooperation within international river basins: The importance of institutional capacity.** *Water Resources Update*, Vol. 125. Carbondale, Universities Council on Water Resources, 2003.

⁴ POSTEL, Sandra. **Global freshwater challenges and food security.** Presentation to the World Food Prize Symposium, 2002. www.worldfoodprize.org/Symposium/02Symposium/2002presentations/postel.pdf

⁵ Postel, op cit, 2002.

Figure 2: 'Basins at Risk'⁶



The 'basins at risk' designation is adapted from forecasts of areas of the world where demand on available freshwater supplies is expected to increase most, correlated with the greatest increase in the scarcity of this supply. As one can see from Figure 2, several regions sharing boundaries on major international river basins are potentially at risk, under this model, for future or ongoing disputes around water supplies. It is estimated that 41% of the world's total population lives in areas under water stress.⁷ Ohlsson (1997) further clarifies this global dilemma by putting the matter of increasing water scarcity in the context of access to available freshwater runoff by region:

The distribution of runoff over the continents is uneven and does not match population concentrations. Asia has 60 percent of the world's population but only 36 percent of the runoff. South America with 5 percent of the world's population has 25 percent of the runoff. A large part of the runoff, both in the tropics and in the northern areas, is inaccessible both to-day and in the foreseeable future. Water must be available at the time it is needed, both for irrigated agriculture,

⁶ Postel, op cit, 2002.

⁷ World Resources Institute (WRI). **A guide to world resources, 2002-2004: Decisions for the Earth, Balance, Voice, and Power.** Washington, WRI, United Nations Environment Programme (UNEP), United Nations Development Programme (UNDP), World Bank, p. 5.

industry and domestic uses. This means that the highest reliability comes from that part of global runoff which is constituted by renewable groundwater or the minimum river flow. This part only constitutes 27 percent of the geographically available flow.⁸

Such forecasts include considerations of average rates of recharge of groundwater and expected trends, as well as predictions on trends of rates of withdrawal of water for human needs.

Another factor that must be mentioned when exploring the potential for water conflict is the issue of negative human impact on the environment. A recent UN report⁹ estimates there will be an additional 50 million refugees created by the end of the decade because of environmental degradation, many of these will be displaced by lack of freshwater. Even today, many so-called economic refugees are fleeing drought, disease and poverty related to lack of clean water. All this describes a world where increasing numbers of people struggle for access to limited freshwater resources resulting in displacement and increasing conflict¹⁰.

Within this broad global outlook, the particularities of regional and sub-regional access to available freshwater supply are varied and complex. By far the most stress is upon regions bordering the Nile, Tigris-Euphrates and Jordan basins in Africa and the Middle East, as well as the Aral Sea and Indus river basins in Asia. The U.S. researcher Michael Klare points out the stress on some of these basins by highlighting the fact that populations in the Jordan, Tigris-Euphrates and Indus basin is expected to increase on average by approximately 100% from the

⁸ OHLSSON, Leif. **Water scarcity and conflict.** Paper presented to the “New Faces Conference”, dealing with “Security Challenges of the 21st Century”, Forschungsinstitut der Deutschen Gesellschaft für Auswärtige Politik, Bonn, October 5-8, p. 3.

⁹ United Nations University, Institute for Environment and Human Security. **As Ranks of “Environmental Refugees” Swell Worldwide, Calls Grow for Better Definition, Recognition, Support.** Press Release for the UN Day for Disaster Reduction: Weds. Oct. 12. Bonn, The Authors, 2005.
http://www.ehs.unu.edu/PDF/051004_final_EHSreleaseENG.pdf

¹⁰ While this paper cannot explore hydrogeology in detail, the matter of human use of freshwater is intimately connected to the hydrogeologic cycle as it occurs across regional contexts, where cities and communities of the world draw upon freshwater at various stages within the cycle from aquifers that may be connected to major river basin systems. Groundwater depletion, for example, has been explored for its likely link with rising sea-water levels; all of these issues are concomitantly linked with the matter of global climate change. In addition, while this chapter will not treat in depth the element of ecological degradation that relates to this topic, human use of water for sustenance, sanitation and industry all obviously impact on the quality of available water. The authors refer interested readers to related scientific and other publications for further reading: e.g., KONIKOW, Leonard, and KENDY, Eloise. **Groundwater depletion: A global problem.** *Hydrogeology Journal*, 13, pp. 317-320, 2005; and SHAH, Tushaar, MOLDEN, David, SAKTHIVADIVEL, R., and SECKLER, David. **The Global groundwater situation: Overview of opportunities and challenges.** Colombo, International Water Management Institute, 2000.

period 1998-2050¹¹. These projections of population increases range from 53.4 percent in Turkey to 178.3 in Jordan. However, these global trends do not provide the entire picture in terms of equitable access to safe water supplies for adequate human development.

Examples of contemporary water conflict dynamics

In Latin America and the Caribbean, for example, a region of the world comparatively rich in freshwater supply, access is complicated due to a concentration of a significant portion of the region's population in areas where access to available freshwater runoff is limited. As reported in the United Nations Environment Programme (UNEP)'s Global Environment Outlook 3, though Latin America and the Caribbean are host to 30% of the world's available freshwater (due largely to runoff from the Amazon), 10% of this access is confined to three regional basins that host 40% of the region's population¹². As Figure 3 illustrates, one critical component to this stress on the area's water supply can be seen in the La Plata basin, which supplies available runoff to roughly 50% of the populations of Argentina, Bolivia, Brazil, Paraguay and Uruguay, and is implicated in an estimated 70% of the GDP of these countries¹³. At the same time, to use Latin America again as an example, fully 73% of all available freshwater is used in agriculture, with 71% being the global average, a statistic illustrating the critical position of water in global agricultural production¹⁴. This context of the strategic importance of the La Plata basin makes for an informative context from which to appreciate recent conflicts over water in the region (see Boxes 1 and 2).

¹¹ KLARE, Michael. **Resource wars: The new landscape of global conflict**. New York, Henry Holt & Co., 2002, p. 163.

¹² UNEP. **Global environment outlook 3: Past, present and future perspectives**. Nairobi & London, UNEP & Earthscan, 2002, p. 167.

¹³ PIEDRO-CUEVA, Ismael. **Context and perspectives of the Plata basin**. River Basin Management Thematic Planning presentation. New York, International Atomic Energy Agency (IAEA), 2002, pp. 1-2.

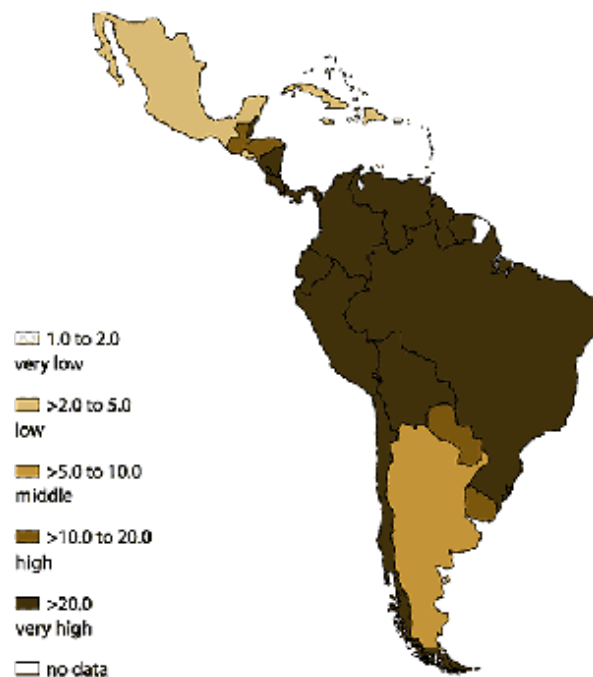
<http://www-tc.iaea.org/tcweb/abouttc/strategy/thematic/pdf/presentations/RiverBasinManagement/ContextandPerspectivesofthePlataBasin.pdf>

¹⁴ Food and Agriculture Organization (FAO) of the UN **AQUASTAT - General summary, Latin America and the Caribbean - Water withdrawal**. Rome, FAO Land and Water Division, 2005.

<http://www.fao.org/ag/agl/aglw/aquastat/regions/lac/index4.stm>

Another example of the importance of water resources in the region is a recent report of 500 US troops moving into the Estigarribia military base in Paraguay¹⁵. Critics claim that part of the goal is to exert control over the vast Guarani aquifer. Whether this is true or not, the speculation alone points to the concerns for water security that exist in the area.

Figure 3: Available freshwater in Latin America per capita¹⁶



Latin America provides some of the most salient examples of recent water conflict, and the two central dynamics suggested at the outset of this chapter figure prominently in some of the cases of contemporary conflict over water emerging from this region. With 76 million of the regional population of 510 million without access to safe drinking water¹⁷, countries such as Argentina

¹⁵ DANGL, Benjamin. What is the U.S. Military Doing in Paraguay? *Upside Down World*, Aug. 1, 2005. <http://upsidedownworld.org/US-in-Paraguay.htm>

¹⁶ UNEP, op cit.

¹⁷ HEARN, Kelly. **Not A Drop To Drink: In parched Latin American countries, the battle over water is ready to explode.** *American Prospect*, Feb. 25, 2005. <http://www.prospect.org/web/printfriendly-view.ww?id=9252>

and Bolivia have been the sites of protracted struggle over the corporate agenda to privatize water supply systems and transform water into primarily a commodity.

The World Bank – including through its lending arm, the International Finance Corporation – and the International Monetary Fund have been protagonists and advocates of the privatization of

Box 1: Cochabamba, Bolivia

The first big water war of the 21st century erupted in Bolivia, when under direct pressure from the World Bank and under IMF structural adjustment, water services were privatized in Latin America's poorest country. After the public water utility in the city of Cochabamba (pop. over 500,000) was handed over to Bechtel, a powerful U.S. corporation, through a closed-door process, water rates doubled and tripled in January and February of 2000. The people of Cochabamba took to the streets, by the tens of thousands day after day, protesting against the rate hikes and subsequent water cut-offs. Oscar Olivera, a visible leader of the struggle said 'they even want to privatize the rain' a reference to provisions under a new Bolivian water law enacted to push water privatisation and full cost recovery. Eventually, the escalating protests ignited a general strike that shut down the city's economy. At the height of this mass resistance, Bechtel was forced to pack its bags and flee the country. But not without consequence. A 17 year old, Victor Hugo Daza was killed by a bullet to the head, another 6 were killed in ensuing protests in other parts of the country. Bechtel, with revenue of over 14 billion USD at the time, also struck back with a punitive \$25 million USD suit against

water in these countries, and citizen movements have been foremost in challenging the impact of such schemes on equity of access to water. Boxes 1¹⁸ and 2¹⁹ outline two cases of citizen resistance to World Bank-enforced water privatization. Already implicated for the failure of massive water infrastructure schemes in India and elsewhere, the World Bank and corporate drivers behind it continue to push for development schemes that favour the centrality of its 'private sector

development' strategy, pitting market and private actors as preferable over state social investment in critical water infrastructure and distribution mechanisms. Conditionalities attached to loans from these international financial institutions (IFIs) including the Inter-American Development Bank and the Asian Development Bank, ensure that preferred privatization is implemented as a condition of such multilateral as well as bilateral aid. Significantly, such conflicts figuring the drive to commodify water involve supranational trade regimes such as the General Agreement on Trade in Services (GATS) of the World Trade Organization, which contains articles (for instance, those on 'domestic regulation' as well as 'national treatment' and the universal 'most-favoured nation' clause) that effectively enforce adherence to trade rules favouring the rights of transnational corporations (TNCs) over any other consideration and ensure any privatization or commodification of water is effectively

¹⁸ Polaris Institute. **Global water grab: How corporations are planning to take control of local water services.** Ottawa, The Author, 2003, p. 3.

¹⁹ Public Citizen. **Water privatization fiascos: Broken promises and social turmoil.** Washington, Public Citizen Water For All Campaign, 2003, p. 2.

irreversible.²⁰ While the evidence from cases of privatization of water inevitably shows reduced access for the poor across the world²¹, the IFIs and many state-sponsored development agencies continue unabated in their enthusiasm for the panacea of privatization as a development solution²². Critical NGOs and others simultaneously continue to hold these trends to account for their devastating social and environmental impact.²³

These examples of conflict over water as a strategic resource – those focusing on trends toward the commodification of water pushed by TNCs and IFIs – are one critical pole to such contemporary conflict dynamics. No doubt social movements will continue to resist efforts on the part of these actors to enforce the corporate privatization agenda in water supply and distribution²⁴. Another set of readily available global examples can be found in the Middle East, where tensions over access to dwindling water supplies have frequently erupted

Box 2: Buenos Aires, Argentina

The Buenos Aires privatization deal, consummated in 1993, had been widely lauded by the World Bank, the Argentine government and the water industry, as an international success story. But, the success story turned sour after the contractual clause that permitted Suez to link water prices to the U.S. dollar, and ensured hefty profits, was overruled by the Argentine government's emergency decree, precipitated by the country's currency crisis. During the first eight years of the contract, weak regulatory practices and contract re-negotiations that eliminated corporate risk enabled the Suez subsidiary, Aguas Argentinas S.A., to earn a 19% profit rate on its average net worth. However, by 2002 Suez had to write off \$500 million in losses because of the Buenos Aires concession.

IMF and World Bank structural adjustment programs have long been squeezing social services and public infrastructure in Argentina. The privatization of water became an added burden on the general population. According to Fernando de la Rúa, one of many presidents that have come and gone during the Argentine crisis (speaking in March 1999 when he was Mayor of Buenos Aires): "Water rates, which Aguas Argentinas said would be reduced by 27% have actually risen 20%. These price increases, and the cost of service extension, have been borne disproportionately by the urban poor. Non-payment for water and sanitation are as high as 30 percent, and service cut-offs are common with women and children bearing the brunt with health and safety consequences."

...As Suez tries to recoup its losses, the government, and the nation's taxpayers, will be left to clean up the mess. Using an increasingly feared tactic of multinational corporations, Suez will bring claims against the Argentine government using the World Bank's International Centre for the Settlement of Investment Disputes (ICSID). The exact amount of Suez's claims against the Argentine government are "secret" but they are demanding compensation for losses relating to water concessions in Buenos Aires, Santa Fe, and Cordoba.

²⁰ Polaris Institute, op cit, 2003; OSTROVSKY, A. **the environment: Implications of the General** Gland, Center for International Environmental Law & World Wildlife Federation (WWF), 2003.

²¹ Public Citizen, op cit, 2003. For more documentation on these global trends, see HOLLAND, Ann-Christin. **The water business: Corporations versus people.** London, Zed Books.

²² The World Bank's World Development Report 2004, entitled 'making services work for poor people', reinforced this ideological position, again utilizing spurious arguments concerning the supposed advantages of private sector actors in ensuring equity of access, an argument refuted by the facts on the grounds across various regional contexts. The report can be downloaded from

<http://web.worldbank.org/external/default/main?menuPK=477704&pagePK=64167702&piPK=64167676&theSitePK=477688>

²³ Some examples of such criticism and resistance can be found in SHIVA, Vandana. **Water wars: Privatization, pollution, and profit.** Toronto, Between the Lines, 2002; BARLOW, Maude, and CLARKE, Tony. **Blue gold: The fight to stop the corporate theft of the world's water.** New York, New Press.

²⁴ For a chronicle of recent resistance efforts in this regard, see HALL, David, LOBINA, Emanuele, and DE LA MOTTE, Robin. **Public resistance to privatization in water and energy.** *Development in Practice*, 15 (3/4), 2005.

into various levels of violence. Boxes 3 and 4 illustrate some of these tensions.

As touched upon above, the pressure on water availability in this region is among the most severe in the world, and the consequences of this dynamic have been borne out in major inter-state rivalries. Despite the low incidence of acutely violent conflict over water during the period 1945-2005, of the 37 disputes over water that could be designated 'acute' during this

Box 3: Middle East tensions 1 – Israel and Palestine

The Jordan River supplies Israel and Jordan with the vast majority of their water. Some hydrologists have identified 1000 cubic meters per person per year as a minimum water requirement for an efficient moderately industrialized nation. Inside Israel's border, the availability of water per-capita in 1990 was 470 cubic meters. It is estimated that by the year 2025 this availability will be reduced to 310 cubic meters. As such, over 50 percent of Israel's water sources rely on rain that falls outside of Israel's borders. Thus, Israel depends on water supply that either comes from rivers that originate outside the border, or from disputed lands.

Israel has constructed an elaborate system of pipes and canals, called the National Water Carrier, that carry water to the communities along the coast including Tel Aviv and to the arid south where it is used for irrigation of crops. Only a few people know how much water the National Water Carrier is capable of transporting because Israel considers such information a matter of national security. A popular assumption is that it can carry the full capacity of the Jordan River. To its credit, Israel has developed a very efficient system for reusing water and has advanced the technology of drip irrigation for agriculture that uses one-fourth the water of conventional irrigation.

Only 30 percent of the water in the region comes from rivers; groundwater accounts for the rest. The most important groundwater aquifers are the Mountain, Eastern, and Coastal. The Mountain aquifer is the largest and provides Israel with almost a fourth of its total water supply. Most of the Mountain and Eastern aquifers are located under the West Bank.

Part of the Coastal Aquifer is located under the Gaza Strip and has been over-pumped for many years, not only by the Palestinian refugees who live there but by Israeli settlers tapping into it from outside the Gaza itself. Gaza has one of the highest growth rates in the world despite a high rate of infant mortality. Over pumping has resulted in seawater incursions into the wells so that the water is mostly undrinkable. In 1995, Gaza Palestinians paid \$1.20 per cubic meter for water, while Israeli settlers paid 10 cents. The government of Israel tightly controls the extraction of water from the aquifers with permits. Palestinians receive fewer permits than Israeli citizens receive and they are allowed to draw water only from shallow wells that often go dry during dry periods. Inequity in water distribution is high on the list of Palestinian grievances.

time, 30 were between Israel and one of its neighbouring states²⁵. Apart from difficulties stemming from its quest to secure water supplies in relation to its neighbouring states sharing the Jordan River basin, Israel has also been critically implicated in negative consequences stemming from inequitable handling of water resources underneath the occupied Palestinian territories. Box 3²⁶ documents some of these tensions. Finally, Box 4²⁷ looks at examples of conflict implicating water in the recent U.S. war with Iraq, documenting the consequences of the conflict on Iraq's water supply. Such destruction of critical water infrastructure in the context of armed conflict continues to occur despite international legal mechanisms

²⁵ WOLF, Aaron, KRAMER, Annika, CARIUS, Alexander, and DABELKO, Geoffrey. **Managing water conflict and cooperation.** In RENNER, Michael (Ed.). **State of the world 2005: Redefining global security.** New York, Norton, 2005, p. 84.

²⁶ KLAAS, Erwin. **Potential for water wars in the 21st century.** Presentation to College for Seniors Lecture Series, "The World Turned Upside Down," April 3, 2003. <http://www.public.iastate.edu/%7Eumariposa/waterwars.htm>

²⁷ GLEICK, Peter. **Water conflict chronology.** (Updated 2004). <http://www.worldwater.org/conflict.htm>

designed to protect water resources in times of war²⁸. Also related to water and the war in Iraq, the UN Special Rapporteur on the Right to Food (which includes water), Jean Ziegler, has condemned the US-led coalition's reported practice of cutting off water from insurgent strongholds as a 'flagrant violation of international law'²⁹. Mr. Zielger has called upon countries to condemn this practice in a resolution at the UN. How the UN deals with these claims is an issue worth monitoring, the outcome of which could illustrate the lack of consistency with regards to enforcement and sanctions against violations of the right to water that must be addressed if we are to move forward on securing water as a fundamental right.

In addition, critical researchers have documented how the lucrative 'reconstruction' contracts that accompanied the U.S.' invasion of Iraq in 2003 have figured prominent TNCs such as the water giant Bechtel, the central corporate protagonist of Bolivia's water conflict. Bechtel was granted a contract for control over Iraq's water and wastewater systems in the context of the invasion and occupation of Iraq³⁰. This example neatly juxtaposes the interests of TNCs in critical natural resources such as water, and oil, in situations where the military of invading countries can act as a 'guarantor' for corporate expansion and profit from these areas.

Box 4: Middle East tensions 2 – the U.S. in Iraq

2003: During the U.S.-led invasion of Iraq, water systems were reportedly damaged or destroyed by different parties, and major dams were military objectives of the U.S. forces. Damage directly attributable to the war includes vast segments of the water distribution system and the Baghdad water system, damaged by a missile.

2003: Sabotage/bombing of main water pipeline in Baghdad. The sabotage of the water pipeline was the first such strike against Baghdad's water system, city water engineers said. It happened around 7 in the morning, when a blue Volkswagen Passat stopped on an overpass near the Nidaa mosque and an explosive was fired at the six-foot-wide water main in the northern part of Baghdad, said Hayder Muhammad, the chief engineer for the city's water treatment plants.

²⁸ LORENZ, Frederick. **The protection of water facilities under international law**. Paris, United Nations Education, Scientific and Cultural Organization (UNESCO), 2003.

²⁹ BBC News, World Edition. **US troops 'starve Iraqi citizens'**. The Author, October 15, 2005. http://news.bbc.co.uk/2/hi/middle_east/4344136.stm

³⁰ JUHASZ, Antonia. **The corporate invasion of Iraq**. <http://www.ifg.org/analysis/globalization/iraqinvasion.html> For more information on global water corporations, please consult Polaris Institute, op cit, 2003.

Toward the Right to Water

Although some important preliminary steps have been made in the direction of securing the notion of water as a fundamental human right and subject to binding, legal frameworks, some nagging paradoxes in practice afflict this progress. Overall, economic, social and cultural rights (under which the right to water resides) have less weight in the UN system than do political or civil rights. They are generally viewed as non-justiciable rights as opposed to political and civil rights which are viewed as justiciable. This is by convention and contradicts the very concept of fundamental human rights. All human rights must be indivisible and non-derogable for the concept to mean anything. The UN must address this paradox. The UN High Commissioner for Human Rights has at least identified the problem:

Under international human rights law (as well as in terms of its application at the national level), civil and political rights have, in many respects, received more attention, legal codification and judicial interpretation, and have been instilled in public consciousness to a far greater degree, than economic, social and cultural rights. It is therefore sometimes wrongly presumed that only civil and political rights (right to a fair trial, right to equality of treatment, right to life, right to vote, right to be free from discrimination, etc.) can be subject to violation, measures of redress and international legal scrutiny. Economic, social and cultural rights are often viewed as effectively "second-class rights"-unenforceable, non-justiciable, only to be fulfilled "progressively" over time.³¹

This status as 'second-class rights' has evolved complacency around monitoring and enforcing economic, social and cultural right. Currently, a broad-based international citizens' movement is pressing an international water treaty to be developed under the auspices of the United Nations that could help to resolve this dilemma in favour of the right to water. The authors of this chapter endorse and advocate for this project and its aims, including creating a binding legal instrument that is enforceable. An initial draft principles document has been produced for feedback³². Before moving on to our conclusions on this basis, it is useful at this point to outline some of the tensions and dilemmas that have surfaced as the international community has struggled with the idea of defining water as a human right.

³¹ UN Office of the High Commissioner for Human Rights. **Fact Sheet No. 16 (Rev.1), The Committee on Economic, Social and Cultural Rights**. <http://www.unhchr.ch/html/menu6/2/fs16.htm>

³² See <http://www.blueplanetproject.net> for details.

In a recent report, The International Union for the Conservation of Nature and Natural Resources³³ reviews various international legal mechanisms for their relation to the idea of water as a human right. Although they argue that water essentially and realistically prefigures any and all of the human rights as enunciated in either the Universal Declaration, the UN Charter, or in the 1966 Conventions³⁴, they note that it remains to be formally enshrined as a fundamental human right in any context. (The authors of this chapter note that water is indeed explicitly mentioned as a right in the UN Convention on the Rights of the Child and in the Convention on the Elimination of All Forms of Discrimination Against Women) The Geneva Conventions also incorporate rights to water as protocols for acceptable conduct in the context of armed conflict. The authors of the report argue that a substantive right to water, enforceable through national and international human rights mechanisms and institutions, could make significant progress in ensuring redress of the current global predicament of a mass lack of access to water for human sustenance and sanitation. Although the UN Committee on Economic, Social and Cultural Rights issued a statement in favour of the idea of water as a human right in its 'General Comment No. 15' (GC15) in 2002³⁵, this statement represents only a contribution to the movement toward the recognition of such a right as enshrined in binding legal mechanisms through the UN.

In the meantime, various international fora and conferences have reflected the ongoing tension between water conceived of as a social right or as a commodity through the pitting of definitions of water as a human right or as a 'human need'.³⁶ The notion of a right evokes implicit issues of obligations to provide access, where as the idea of a 'need' only implies that water may be provided by any entity and at un-regulated rates as well as by varying standards. Though non-binding in terms of their effect or relation to international legal instruments and mechanisms, the battles of language and representation reflected at such meetings are indicative of the protracted struggle over how water ought to be perceived under existing tools of

³³ IUCN. **Water as a human right?** IUCN Environmental Policy and Law Paper 51. Cambridge (U.K.) & New York, The Author & UNDP, 2004.

³⁴ The '1966 Conventions' refers to both the United Nations International Covenant on Economic, Social and Cultural Rights as well as well as the International Covenant on Civil and Political Rights.

³⁵ <http://www.unhcr.ch/html/menu2/6/gc15.doc>

³⁶ SALMAN, M., and McINERNEY-LANKFORD, Siobhán. **The human right to water: Legal and policy dimensions.** Washington, the World Bank, pp. 4-5; BARLOW, Maude. **The right to water: The campaign for a United Nations treaty.** [http:// www.blueplanetproject.net/cms_publications/TRWEng.pdf](http://www.blueplanetproject.net/cms_publications/TRWEng.pdf)

international law. The ongoing tensions at such meetings reflect the vigilance of both TNCs, with their vested interest in transforming water into a commodity on the one hand, and critical citizen movements, NGOs and unions on the other, which have all continually pressed for the conception of water as a fundamental right which is part of the global commons and a public trust. The Mar Del Plata Water Conference of 1977 explicitly endorsed the idea of water as a human right, only to be succeeded by the 1992 Rio Conference's articulation of the idea of water as a human need. Successive World Water Forum meetings in 1997, 2000 and 2003, reflecting the interests of the corporations which play a strong role in the body organizing the forum, the World Water Council, have failed to decisively declare water a fundamental human right, even after General Comment 15 was released. They instead have respectively reinforced a dichotomy in thinking about water (as both a right and a need) that provides the murky context we deal with today, wherein corporations are encouraged by IFIs under the tutelage of the powerful governments which control them and with the threat of violation of international trade regulations to enforce the idea of water as a commodity with full impunity.

It is in this context that contemporary citizens' movements such as the Blue Planet Project³⁷ (BPP), as part of the internationally-based Friends of the Right to Water, are pressing for the adoption of a treaty to provide accountability in international law for the redress of violations of the right to water. These efforts take the 'soft law' of the General Comment and attempt to create a binding, enforceable, legal instrument to secure the right to water.

Subsequent to General Comment 15, it is worth noting the way those in favour of water privatization have altered their public response to the concept of the human right to water. Understanding that their previous opposition to the human right to water was sensitive and harming their public relations; corporations and the organizations that they work with, such as the World Water Council, are now putting energy into reframing the human right to water to actually serve their interests. RWE Thames, the world's 3rd largest water corporation has publicly embraced the human right to water as has the World Water Council. This change of heart for those who condone privatization and have previously resisted declaring water to be a human right is because they now see an opportunity to define this right as fundamentally a question of access. Critiques of this approach, including the Blue Planet Project and the Friends of the Right to Water, believe that the right to water is much broader and must encompass

³⁷ <http://www.blueplanetproject.net/english/>

control if it is to respect the spirit of the right. This is based on GC 15 where water is viewed as part of the global public commons and as such, the state is responsible for ensuring the right to water to its citizens. This re-framing of the Right to Water means it is harder for states to hand control over to the market or to corporations who deliver water on a market-based approach.

In Kyoto, at the 3rd World Water Forum, reference to water as a human right was strongly resisted by corporations, international financial institutions and governments. It was ultimately excluded from the final text despite the UN Committee on Economic Social and Cultural Rights (CESCR) having just four months earlier already adopted GC15 confirming state obligations on the Right to Water. Since then, corporations and some institutions have recognized the human right to water as a tool that they can use to pressure states to allow privatization and open up water markets. Ironically, pressing for an unqualified and narrow definition of the human right to water seems to actually work towards the opposite effect. Market-based mechanisms can be instituted and problems increase as governments abrogate their responsibilities to their citizens and hand control over to corporate actors. Without an effective mechanism to hold state and non-state actors to account the right becomes meaningless. This is one way that the initiative of the Friends of the Right to Water differs greatly from the Green Cross initiative.

Conclusions

The authors believe water conflict, within and between states will rapidly grow in the coming years unless efforts are successful to seek ensure the right to water rather than allowing scarce water resources to be distributed via primarily economic considerations and as a commodity. Market-based allocation of scarce water resources leaves the poor without access and will inevitably lead to social strife and upheaval. 'Water Wars' can take on many different manifestations ranging from disputes within communities and between neighbours regarding allocation of water, to pure regional power politics where stronger countries will attempt to wrest more and more water from weaker states, especially controlling groundwater resources and bullying for greater shares of transboundary water.

On transboundary water, it is illustrative to observe how a weakened Iraq in the context of Turkey's GAP project is an example of how geopolitical power shifts also shift the flow of water. The GAP project is a system of 19 dams built by Turkey to control the waters of the Tigris

and Euphrates rivers. A strong Iraq had been able to thwart completion of this project but as Iraq emerged weak from prolonged international conflict the project has progressed. The result geopolitically culminated in Turkey signing an 'Arms for Water' deal with Israel as reported by the BBC. Under this 20-year deal, Turkey has become a regional water power and would be sending water to Israel via tanker and later pipeline in return for Turkey receiving Israeli arms and military assistance. After the deal was made public through a BBC report, Turkey backed away from the agreement but lessons regarding geopolitics and the power of water in the region remain³⁸. Syria's water supply is also being threatened by Turkey's upstream control project.

Most conflicts as they will play out will probably not be overtly linked to water, but like the Palestinian-Israeli conflict, water will be an intricate part of the problem and without resolution of the water politics, lasting solutions will remain elusive. There are good models for resolution of water conflict such as the Boundary Waters Treaty of 1909 signed between Canada and the USA with oversight by the International Joint Commission. Unfortunately, this treaty and other similar mechanisms of mediation are in jeopardy as raw power politics supercedes diplomacy or multi-lateral negotiation in an increasingly polarized and unstable global order.

We must vigorously resist the trend where powerful countries (and corporations) are able to operate outside international law. Ratification of international treaties and proper implementation must become the norm rather than the exception. The binding water treaty being promoted by groups working within the international water justice movement explicitly holds non-state actors accountable for violations of the right to water, including the transnational corporations and the international financial institutions. If successful, promotion of this treaty will change the way we think about our water and the number of positive solutions would grow vigorously. If we are not successful, the market will run rampant and water rights will only mean individual rights, not collective rights. This would signal that everything is ultimately for sale and conflict would increase dramatically as dwindling water increasingly comes under the control of those who seek to profit economically from our water.

³⁸ International Water and Sanitation Project. **Israel: Turkey denies water for arms deal.** Jan. 26, 2004. <http://www.irc.nl/page/7871>

Ultimately, solutions for the global water crisis must be based on upholding the fundamental right to water and this in turn goes to the heart of democracy and democratic control of our vital, life-giving, freshwater. The best way to ensure equitable distribution of water, to expand delivery in a manner that does not choose for the wealthier at the expense of the poorer and to reduce conflict is through participatory processes that respect the needs of the community. In many places there will not be enough water to meet all the competing needs, including those of agriculture and industry not to mention those of individuals, families and communities. If, however, the overarching principles of the right to water (for people and nature since there can be no human right to water without respecting nature) are respected, then the potential for long-term solutions are increased dramatically. With the openness of democratic participation there is the potential for reduced conflict through doing as much as possible to meet the needs of the overall community rather than first meeting the needs of those who have power within the community. An excellent publication outlining many of the ways communities have taken control of their water is ‘Reclaiming Public Water – Achievements, struggles and visions from around the world’ published by Corporate Europe Observatory and Transnational Institute. In some ways it is more profound to look at what has happened to Cochabamba, for instance, after control was turned over to the community from the transnational corporation, than to explain the immediate conflict. It is through examining the building of SEMAPA, the public water provider in Cochabamba, where we can see the way forward to a world with less conflict and where the hope of ‘water for all’ can possibly be realized. It is clear that just as each situation is unique, so to must be the solutions devised by the community. This is why the examples in ‘Reclaiming Public Water’ are illustrative rather than prescriptive. This truth is lost on those advocating the neo-liberal model for the world including privatization of public services; those promoting this ideology seek to impose one vision on all the diverse communities of the globe (benefiting the few at the expense of the majority). From Cochabamba to Ghana and Uruguay to South Africa, people are fighting against the commodifying, corporatizing and privatizing of the world’s water. Water conflict and continued lack of access to safe and affordable water will unfortunately increase unless we can take back control of water as a public good and secure the right to water. This is undoubtedly one of the great challenges of our time and to be successful the world must act together acknowledging these rights as collective rights and therefore the responsibilities for ensuring these rights as collective responsibilities.

Box 1: Cochabamba, Bolivia

The first big water war of the 21st century erupted in Bolivia, when under direct pressure from the World Bank and under IMF structural adjustment, water services were privatized in Latin America's poorest country. After the public water utility in the city of Cochabamba (pop. over 500,000) was handed over to Bechtel, a powerful U.S. corporation, through a closed-door process, water rates doubled and tripled in January and February of 2000. The people of Cochabamba took to the streets, by the tens of thousands day after day, protesting against the rate hikes and subsequent water cut-offs. Oscar Olivera, a visible leader of the struggle said 'they even want to privatize the rain' a reference to provisions under a new Bolivian water law enacted to push water privatisation and full cost recovery. Eventually, the escalating protests ignited a general strike that shut down the city's economy. At the height of this mass resistance, Bechtel was forced to pack its bags and flee the country. But not without consequence. A 17 year old, **Victor Hugo Daza was killed by a bullet to the head, another 6 were killed in ensuing protests in other parts of the country.** Bechtel, with revenue of over 14 billion USD at the time, also struck back with a punitive \$25 million USD suit against the Bolivian government, claiming compensation for future lost profits under a bilateral investment treaty. Since this time, the Cochabamba water system has been controlled by SEMAPA, the public utility created after the conflict and publicly-managed¹.

¹Transnational Institute, Corporate Europe Observatory, Reclaiming Public Water: Achievements, struggles and visions from around the world. Amsterdam, TNI/CEO, 2005

Box 2: Buenos Aires, Argentina

The Buenos Aires privatization deal, consummated in 1993, had been widely lauded by the World Bank, the Argentine government and the water industry, as an international success story. But, the success story turned sour after the contractual clause that permitted Suez to link water prices to the U.S. dollar, and ensured hefty profits, was overruled by the Argentine government's emergency decree, precipitated by the country's currency crisis. During the first eight years of the contract, weak regulatory practices and contract re-negotiations that eliminated corporate risk enabled the Suez subsidiary, Aguas Argentinas S.A., to earn a 19% profit rate on its average net worth. However, by 2002 Suez had to write off \$500 million in losses because of the Buenos Aires concession.

IMF and World Bank structural adjustment programs have long been squeezing social services and public infrastructure in Argentina. The privatization of water became an added burden on the general population. According to Fernando de la Rúa, one of many presidents that have come and gone during the Argentine crisis (speaking in March 1999 when he was Mayor of Buenos Aires): "Water rates, which Aguas Argentinas said would be reduced by 27% have actually risen 20%. These price increases, and the cost of service extension, have been borne disproportionately by the urban poor. Non-payment for water and sanitation are as high as 30 percent, and service cut-offs are common with women and children bearing the brunt with health and safety consequences."

...As Suez tries to recoup its losses, the government, and the nation's taxpayers, will be left to clean up the mess. Using an increasingly feared tactic of multinational corporations, Suez will bring claims against the Argentine government using the World Bank's International Centre for the Settlement of Investment Disputes (ICSID). The exact amount of Suez's claims against the Argentine government are "secret" but they are demanding compensation for losses relating to water concessions in Buenos Aires, Santa Fe, and Cordoba.

Box 3: Middle East tensions 1 – Israel and Palestine

The Jordan River supplies Israel and Jordan with the vast majority of their water. Some hydrologists have identified 1000 cubic meters per person per year as a minimum water requirement for an efficient moderately industrialized nation. Inside Israel's border, the availability of water per-capita in 1990 was 470 cubic meters. It is estimated that by the year 2025 this availability will be reduced to 310 cubic meters. As such, over 50 percent of Israel's water sources rely on rain that falls outside of Israel's borders. Thus, Israel depends on water supply that either comes from rivers that originate outside the border, or from disputed lands.

Israel has constructed an elaborate system of pipes and canals, called the National Water Carrier, that carry water to the communities along the coast including Tel Aviv and to the arid south where it is used for irrigation of crops. Only a few people know how much water the National Water Carrier is capable of transporting because Israel considers such information a matter of national security. A popular assumption is that it

can carry the full capacity of the Jordan River. To its credit, Israel has developed a very efficient system for reusing water and has advanced the technology of drip irrigation for agriculture that uses one-fourth the water of conventional irrigation.

Only 30 percent of the water in the region comes from rivers; groundwater accounts for the rest. The most important groundwater aquifers are the Mountain, Eastern, and Coastal. The Mountain aquifer is the largest and provides Israel with almost a fourth of its total water supply. Most of the Mountain and Eastern aquifers are located under the occupied West Bank.

Part of the Coastal Aquifer is located under the Gaza Strip and has been over-pumped for many years, not only by the Palestinian refugees who live there but by Israeli settlers tapping into it from outside the Gaza itself. Gaza has one of the highest growth rates in the world despite a high rate of infant mortality. Over pumping has resulted in seawater incursions into the wells so that the water is mostly undrinkable. In 1995, Gaza Palestinians paid \$1.20 per cubic meter for water, while Israeli settlers paid 10 cents. The government of Israel tightly controls the extraction of water from the aquifers with permits. Palestinians receive fewer permits than Israeli citizens receive and they are allowed to draw water only from shallow wells that often go dry during dry periods. Inequity in water distribution is high on the list of Palestinian grievances and any redress of this inequality would cost the Israeli's a great deal of their economic advantage over their neighbours.

Box 4: Middle East tensions 2 – the U.S. in Iraq

2003: During the U.S.-led invasion of Iraq, water systems were reportedly damaged or destroyed by different parties, and major dams were military objectives of the U.S. forces. Damage directly attributable to the war includes vast segments of the water distribution system and the Baghdad water system, damaged by a missile.

2003: Sabotage/bombing of main water pipeline in Baghdad. The sabotage of the water pipeline was the first such strike against Baghdad's water system, city water engineers said. It happened around 7 in the morning, when a blue Volkswagen Passat stopped on an overpass near the Nidaa mosque and an explosive was fired at the six-foot-wide water main in the northern part of Baghdad, said Hayder Muhammad, the chief engineer for the city's water treatment plants.