

Private Interests, Extreme Energy and the Human Right to
Water

MA Understanding and Securing Human Rights,

Institute of Commonwealth Studies

School of Advanced Study

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Submitted: Monday 3rd September 2012

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Acknowledgements

I wish to thank my tutor Dr Damien Short whose encouragement ensured that I would write this dissertation.

Abstract

This dissertation is focused on challenges to the human right to water. Nearly one billion people lack access to potable water, most in the Global South. Water can also become a human health hazard by contamination from chemicals emitted through fossil fuel extraction wherever development occurs. This paper assesses challenges posed to safe and sufficient water access, as a human right, by privatization and corporate interests, in an impoverished South American country, Bolivia, and in the world's largest national economy, the USA. In conjunction, the paper analyses the effects on water of extreme, unconventional energy operations, including contamination from tar sands in Northern Alberta, Canada and pollution from hydraulic fracturing in the USA. This paper argues private interests and extreme energy undermine water rights transnationally, mindful of the inequalities *between* and *within* states and collusion of governments. The paper contends that many challenges to water rights result from the historic ascendancy of the profit motive intractably predominating in this era of disaster capitalism and from the lack of directly democratic, long-term governance in the stewardship of valuable, non-renewable resources, of which freshwater is a prime example.

Introduction

Arguments in favour of research on the subject of water access and rights are many and persuasive. Human beings and other species with which we share this planet can be described as water-based life forms. Access to water is vital for the panoply of human needs, activities and a precondition for the realisation of all human rights; it is integral to life. Diarrhoea is cited as the second biggest killer of infants under five, largely caused by the problem of children drinking unsafe water and lacking adequate sanitation and hygiene.¹ A staggering infant death toll (1.5 million per year) from water-borne diseases, more than from AIDs, malaria and measles *combined*, continues to take young lives, despite being preventable.² Contamination of water by industrial practices, especially fossil fuel extraction, with records of emitting known toxins is a persistent public health problem, threatening communities and cultures.³ By the term access I mean to convey the capacity to use water, of a sufficient quality and quantity to meet personal needs, in practice, not only in theory.

My choices of case study require justification. Bolivia, Canada and the USA have vastly different economies: See Fig. 1.1 (p59) and Fig. 1.2 (p60) comparing their GDPs (Gross Domestic Product). Bolivia is a ‘developing,’ impoverished state while the USA is an advanced, industrial state and the world’s largest national economy. Canada is an ‘advanced’ state with a total GDP lagging behind the U.S. but its GDP *per capita* factors population size into the comparison. GDP growth rate is considered significant, slowing globally, since the 2008 financial collapse and consequent economic contraction. Moreover, Sokol persuasively argues that “GDP reflects a rather narrow definition of what represents an economy”.⁴ It does not, for example, contrast the inequalities within states, commonly measured by Gini coefficient. The Gini index reflects how Bolivia and the U.S. are more unequal than Tunisia and Egypt, with Bolivia the world’s eighth most unequal state and the U.S. the most unequal Western, industrialised nation.⁵ Canada fares better but the index does not disaggregate for the indigenous minority. Therefore, particularly after the Arab Spring, examining the water issue in these states is compelling.

¹ UNICEF (The United Nations Children’s Fund) and WHO (World Health Organisation) report, “*Diarrhoea: Why Children are Still Dying and What Can Be Done*” 2009, Foreword V

² Ibid;1

³ WHO

⁴ Martin Sokol, “*Economic Geographies of Globalisation: A Short Introduction*,” 2011; 8

⁵ CIA, The World Factbook, Gini Index

The geographical scale of the three nations means I am not studying challenges to water rights throughout each state. Yet Shaw and Beck's (2000) concept of 'methodological nationalism' means we infer the study of states, from that of smaller areas, or examples within them; gravitating towards geographical divisions assuming nation-state boundaries.⁶ By examining governmental positions I am, through a limited prism, studying the 'whole' of these states, yet aware the positions of governments are not likely to often be in sympathy with the multiple, sometimes dissident, positions of the governed. To study the governmental decisions of a nation-state is to study only a fraction, perhaps turned into an 'imagined whole' because powerful governments' bulldoze through policies, including privatization, with substantial impacts on the less powerful, and for which there may be no democratic mandate. Furthermore, they strive to monopolize supply and media of information and what counts as worthy political discourse.

Propagation and implementation of the 'grand delusion'⁷ of the efficiency and necessity of privatizing public utilities, including water, originated with the Anglo-US Thatcher and Reagan governments.⁸ Bolivia is now famous for ousting Bechtel, the San Francisco-based engineering corporation, and 'investor' in the private takeover, in what is hailed as a David v Goliath triumph against the neoliberal agenda. What challenges to water rights, stem from privatization in Bolivia, the site of the doctrine's successful rejection and in the USA, one of the seedbeds of water privatisation ideology? These are the questions I address in Chapters 2 and 5 respectively, also considering wider challenges to water access in Bolivia and cut-offs of poor people, alongside the interests of the bottled water industry in the U.S. Chapter 1 outlines how the water issue has been framed and highlights important academic debates, arguing for water's fundamental nature as a human right.

⁶ A discussion of this is in Mary Kaldor et al. *Global Civil Society in an Era of Regressive Globalisation*, "*Global Civil Society*," 2003; 4

⁷ Used by Paul Bluchheit, "Five Ways Privatization Degrades America," 13th August 2012

⁸ The doctrine's prior effects on developed states such as the U.K. where the 'iron lady' privatised the water system is outlined in Ann-Christin Sjolander Holland, "*The Water Business: Corporations Versus People*" 2005; 6-14

To rectify the kinds of inequality referred to calls for a theory of economic justice. However, the water crisis is compounded by resource depletion and anthropogenic climate change⁹, itself a product of industrialisation, ‘development’ and wildly unequal lifestyles between rich and poor, especially between the hemispheres. Inequalities in energy usage¹⁰ further make us ask what challenges, for the safety and sustainability of water sources, come from the fossil fuel energy sector, with this question addressed through extreme examples in chapter 3 on tar sands and chapter 4 on hydraulic fracturing. Any theory of economic justice must take into account the vital role of energy in society *and* the impending and current ecological crises; interweaving a theory of economic with ecological, justice. Although theoretically there is sufficient freshwater to sustain populations, this works to obscure global structural inequity, with the U.S. using the most water *per capita*.¹¹ This average also fails to reflect the greater use by U.S. elites and that domestic use and agriculture is dwarfed by industry.¹²

⁹ UNESCO (United Nations Educational, Scientific and Cultural Organization) et al, “*Climate Change and Water, An Overview from the World Water Development Report 3: Water in a Changing World*,” 2009; 1-2

¹⁰ International Institute for Applied Systems Analysis (IIASA) “*Global Development and Energy Inequality*,” 2007; 25

¹¹ Mark Fischetti, “*How Much Water Nations Consume*” May 21st 2012

¹² World Water Assessment Programme, 2006, UN World Water Development Report 2: “*Water: A Shared Responsibility*” Figure 8.3 shows water use by industry v domestic use and agriculture.

Chapter 1 Framing of the Water Issue and Literature Review

Access to water for personal use, has only recently, been enshrined as an independent human right. Consensus was achieved albeit with richer states, Canada, USA, UK and Australia among them, abstaining: The UNGA (United Nations General Assembly) decision¹³ has since been developed by the HRC (Human Rights Council) calling upon states to ensure financing for sustainable delivery of water services.¹⁴ The inspirational roots of the right to water could be attributed to the UDHR (Universal Declaration of Human Rights 1948)¹⁵ and to the global promotion of health since the establishment of the WHO (World Health Organisation 1946). The WHO predates the UDHR but was created after the signing of the UN Charter which granted legitimacy to the decision-making and treaty-signing processes negotiated through its newly established UN fora. It promoted social progress based on principles of human dignity, rights and fundamental freedoms.¹⁶ It is impossible to envision widespread social progress and human flourishing without substantial endeavours to ensure sufficient, clean and affordable water for all.

It is this fact which renders the right to water, not so much an addition to the growing body of human rights, but the righting of a glaring omission, in its interpretive evolution. There has long existed a right to water, but only attaching to prisoners of war, referred to in the Geneva Convention. Conventions dealing specifically with the inadmissibility of types of discrimination, including CEDAW (the Convention on the Elimination of all forms of Discrimination against Women, 1979) which in article 14 (h) express the rights of women to “enjoy adequate living conditions, particularly in relation to housing, sanitation, electricity *and water supply* etc.” (emphasis added).¹⁷ Many rights enshrined in the human rights system are formalised legal entitlements without which life is unliveable or human agency and dignity impossible. The right to water is such a right as is the right to be free from hunger, although the latter is far more longstanding in law than the former.

¹³ (Res. 64/292) 28th July 2010

¹⁴ A/HRC/RES/18/1 28th September 2011

¹⁵ UDHR from Gandhi, *International Human Rights Documents* 6th Edition, 2008; 10

¹⁶ UN Charter Clauses on social progress from Gandhi, *International Human Rights Documents* 6th Edition, 2008; 3

¹⁷ CEDAW from Gandhi, *International Human Rights Documents* 6th Edition, 2008; 67

For sustaining and creating what can be conceived of as a “minimally good life,”¹⁸ an objective to which Nickel considers human rights can feasibly contribute; rights to water and freedom from hunger¹⁹ could never be considered superfluous. Fulfilment of subsistence rights generates well-being and water is naturally required for irrigation to produce food,²⁰ a fact reflecting the ‘indivisible and interdependent’²¹ nature of all rights and the continuing primacy of agriculture as an industry. Cross-generational agricultural requirements further stress the importance of, what Nickel defends as “rights to a safe environment”.²² The task of rendering the civil and environmental compossible, appreciating that the space for political freedom is constrained by the parameters of environmental health, is nevertheless difficult given the extent to which, specifically human, as opposed to “planetary rights,”²³ such as freedom from hunger, lack realization.²⁴

The human right to life is fundamental, *the* struggle of our time and inextricable from the human right to water. The right obliges governments not only to refrain from killing but to take reasonable measures within their power to protect the lives of those in their jurisdiction.²⁵ This duty is indivisible from, and complimentary to, duties under the right to health; a right which cannot be circumscribed to obligatory provision of healthcare but is defined as a right to “the highest attainable standard of health” including the “underlying determinants of health”²⁶ of which clean and sufficient water must be the most basic,

¹⁸ James W. Nickel, *Making Sense of Human Rights*, 2007

¹⁹ Article 11.2 of the ICESCR, 1966 expresses a right to be free from hunger which stands alongside proponents of food security and sovereignty. This year, World Water Week (26th -31st August) had a thematic focus on water and food security.

²⁰ However starvation from famine is attributable, usually, not to a failure of irrigation in food production, but to lack of purchasing power for food that is on the markets.

²¹ Vienna Declaration and Programme of Action, Adopted by the World Conference on Human Rights in Vienna, 25th June 1993

²² James W. Nickel, *The Human Right to a Safe Environment: Philosophical Perspectives on its Scope and Justification*, 18 Yale J. Int’l L. 1993; 281-85

²³ Term employed to argue for interests of future generations by Edith Brown Weiss, *In Fairness to Future Generations: International Law, Common Patrimony and Intergenerational Equity*, 1989

²⁴ Andrew Wander, *Extreme Hunger in East Africa and the Sahel; Forewarned but not Forearmed*, *The Guardian*, May 9th 2012

²⁵ In the case *KL v Peru*, regarding abortion, mental suffering and suicide, in his dissenting opinion Mr Hipolito Solari-Yrigoyen stated “It is not only taking a person’s life,” that violates the right to life (article 6 ICCPR) but “also placing a person’s life in grave danger”. CCPR/C/85/D1153/2003 22nd November 2005.

²⁶ General Comment 14 appended to the ICESCR, 2000 states the right to health is ‘an inclusive right extending not only to timely and appropriate healthcare, but also to the underlying determinants of health, such as *access to safe and potable water ...etc*’ (emphasis added). quoted in Usdin, *The Nonsense Guide to World Health*, 2007; 17

alongside sanitation. Moreover the right to housing is the right to an abode that is practically habitable with implications for cut-offs and contaminated supply.²⁷

I have referred to the right to life, the cornerstone of civil and political rights, which have taken precedence over subsistence rights. Rights to health, housing, work, education, food, development and better living standards are all, arguably, aimed, however, at ensuring longevity and preventing people from living *an inhuman and degrading life*, stemming from the undignified suffering of impoverishment. In contrast, the right, coupled with torture, using the words ‘inhuman and degrading’ is enshrined as a right to be free from unreasonably severe or illegitimate *treatment*; evocative of incarceration, punishment and interference by state representatives. Living in extreme poverty could be considered inhuman and degrading yet the right itself does not refer to a general situation of life. However it is becoming more widely accepted that, in a world of plenty, poverty can be construed as a form of violence and certainly “a denial of fundamental rights”.²⁸

Clearly, possessing needs does not equate to them being met; even when needs correspond with rights, they routinely go unfulfilled. The World Bank has highlighted the vacillation between the issue being framed as a ‘vital human need’ and a ‘human right.’ In a 2004 policy document²⁹ the Bank espouses the notion of water as an economic asset, as an authoritative, unquestionable truth, as if such a view could materialise without the agency of particular financial and institutional actors, including the Bank itself. It makes no reference to *who* conceives of water primarily as an economic asset, *why* and to *what end?* What power do these actors enjoy and how can we characterize their relation to impoverished populations,

²⁷ “No dwelling should be deprived of water because such deprivation would render it unliveable.” Special Rapporteur on adequate housing (E/CN.4/2002/59, para. 56)

²⁸ Diane Elson. *The Reduction of the UK Budget Deficit: a Human Rights Perspective*, International Review of Applied Economics, 2012;179

²⁹ Salman M. A. Salman and Siobhán McInerney-Lankford, “*The Human Right to Water: Legal and Policy Dimensions*,” World Bank (IBRD), 2004

largely in ‘developing’ countries³⁰ without sufficient, safe water? The document is silent on these questions in its assertion that water must be subject to free market forces; a fundamentalism that, I argue, undermines the enforceability and fuels the persistent impression of the inferior status of economic, social and cultural rights.

The 1992 Dublin Conference on Water and Sustainable Development, arguably in paradoxical fashion, entrenched the treatment of water as an “economic good”, whilst framing human water needs explicitly as human rights, reaffirming “the right of all human beings to have access to clean water...at an affordable price”.³¹ Two opposing camps have emerged: one advocating the marketisation of water as a necessary, responsible way to regulate supply and demand, implying that as supply dwindles, prices reflect appreciation, encouraging conservation of reserves, an attitude typified by James Wolfensohn, ex-president of the World Bank. For the opposing camp, opening up water to multinational corporations, with origins in French banking interests, or modelled on French companies with a record of damages paid over corruption (Holland 2005), is anathema. This camp is exemplified by Vandana Shiva who criticises the World Bank, IMF (International Monetary Fund) and WTO (World Trade Organization) for promoting the profit motive in relations around a shareable, commons-based resource, water, which she conceives of as a sacred ‘gift of nature’.³²

I include Figure 1.3 (p61), of a four set Venn diagram, visually representing my explication of how the right to water is at the nexus of other intersecting rights. The right to e.g. found a family³³ is dependent upon the capacity to use water to meet personal needs, a contingency from which the logic of all other rights proceeds. The diagram illustrates, specifically, the fundamental relationship between the core groups of rights with reciprocal dependence on the right to water i.e. that the right to water has been historically encompassed by these other rights and these rights are, in turn, dependent on the “right” to water or on vital water needs being met. This is a diagrammatic presentation of the argument constructed by Shari Collins-

³⁰ The concept ‘developing’ is a misnomer by Oswaldo de Rivero, *The Myth of Development*, 2001

³¹ Principle 4 of the Dublin Statement on Water and Sustainable Development

³² Vandana Shiva, *Water Wars: Privatization, Pollution and Profit*, 2002

³³ Repeatedly stressed by the UN as a fundamental unit of society; it may tentatively contribute to cross-generational claims for justice?

Chobanian; that the very core and basis of the human rights system, the right to life, assumes and depends on prior, foundational and implicit, “rights to clean air, water and soil”.³⁴

The diagram depicts the right to water as encompassing the rights to health and other subsistence rights, to life, to a healthy environment and to self-determination. The latter I include because it is the formal right most closely related to collective claims for autonomy, the right to determine a compatible economic and development model, appropriate to a culture’s way of life. For indigenous peoples the self-determination and autonomy arguments are central to staking claims for control of culturally requisite resources like land and water, used for their livelihoods in ways challenging the dominant financial model and commodification of nature. However they suffer philosophically from attaching to groups in a liberal system committed to individual rights.³⁵

The ICCPR recognises, however, not only rights attaching to individuals, but rights which can only be enjoyed collectively.³⁶ Article 1.1 begins, “All *peoples* have the right of self-determination” and (by virtue of that right) “freely pursue their economic, social and cultural development” (emphasis added).³⁷ The right to “the continuous improvement of living conditions,”³⁸ is enshrined in Article 11 of the ICESCR and depends, not on a model of development pursuing economic growth as an end *per se*,³⁹ but the goal of improving living standards throughout society. The treaty monitoring body, interpreted use of the word ‘including’ in the list: “including adequate food, clothing and housing” as meaning the list was never intended to be exhaustive, and has in its subsequent evolution, particularly in General Comment No.15, enjoined a right to water from the treaty obligations.⁴⁰

³⁴ Shari Collins Chabonian, “*Beyond Sax and Welfare Interests: A Case for Environmental Rights*”, *Env. Ethics*, Vol. 22, 2000; 133-48

³⁵ They suffer practically from the drive for ‘accumulation by dispossession’ of e.g. oil companies like BP although states such as the U.K. insist on a front of philosophical objection to ‘group’ rights.

³⁶ The article 21 right to peaceful assembly is an example.

³⁷ From ICCPR in Ghandi, Sandy, *International Human Rights Documents*, 2008; 40

³⁸ From ICESCR in Ghandi, Sandy, *International Human Rights Documents*, 2008; 58

³⁹ New Internationalist edition, “*Life Beyond Growth*” 434, features discussions on growth v steady-state economics, July/ August 2010; 4-5, 10-12 and 14-15

⁴⁰ UN Committee on Economic, Social and Cultural Rights (CESCR), *General Comment No. 15: The Right to Water (Arts. 11 and 12 of the Covenant)*, 20 January 2003, E/C.12/2002/11

Whether, or to what extent, the generational rights schism between civil and political and economic, social and cultural rights can be bridged, by noting how they reinforce and reaffirm each other, is open to question. Subsistence rights have suffered from systemic, market-state failures, subjected to fiscal constraints and aspiration-based calls for “progressive realization”. This is a theoretical debate whose practical implications for the widening of water access should not be underestimated. Furthermore, the consensus v pluralism debate⁴¹ and the problematic nature and precarious status of group rights⁴², makes arguing for usufructory water rights or environmental rights as “emergent human rights” even more difficult. Nonetheless, Hiskes rises to this challenge, incorporating the concept of intergenerational justice in his argument for the “Right to a Green Future”.⁴³

⁴¹ An analogy might be a musical band whose members disagree over whether they should pursue their deepest artistic goals or creating a larger fan-base for the albums they have already made.

⁴² A case arguing that minority group rights, subsumed under the banner of multiculturalism, can undermine the feminist cause is persuasively made by Susan Moller Okin *et al.* Okin, “*Is Multiculturalism Bad for Women?*” 1999

⁴³ Richard P. Hiskes, “*Right to a Green Future: Human Rights, Environmentalism and Intergenerational Justice*,” *Human Rights Quarterly*, 27, 2005; 1346-1364

Chapter 2 Bolivia: The Right to Water Threatened and Engendered

In 1999 a consortium comprised of *Aguas del Tunari*,⁴⁴ run by London-based International Waters, owned by San Francisco's Bechtel, with token involvement from local businesses, took over the public water utility, Semapa, in the city of Cochabamba in a forty year lease supposed to last until 2039. Pressure from the World Bank and the IMF forced the deal through, as did the easy acquiescence of Bolivia's President and previously its dictator, Hugo Banzer. It was leased cheaply and to the only bidder. This takeover did not expand the most archetypal 'water barons' such as French *Suez Lyonnaise* and *Veolia Environnement* (Vivendi); the two taking the lion's share of developing countries' public water utilities since they were opened up or 'liberalised'.

Alongside the contractual obligations of the privatisation⁴⁵, Bolivian laws were amended to strongly protect the interests of the multinationals involved in the consortium, with laws introduced making small, communal and co-operative run wells the property of the water consortium or otherwise illegal, criminalizing traditional methods of harvesting rainwater. The legal changes clearly undermined the ability of the people of Cochabamba to access water, incurring fierce opposition. Although the public was not satisfied with the regional utility, whose users failed to receive water regularly throughout the week, the system was preferable to that of the secretive back room 'briberization'. Semapa had been plagued with many problems one of which was its unsuccessful bids for credit from the IADB (Inter-American Development Bank), as it needed large scale improvements not possible without start-up capital for a long term project.⁴⁶

Investment in the form of a dam-building project, with initially two possible ideas, the Corani or the Miscuni dam was intended to accompany the takeover, providing the technology to

⁴⁴ "*Cochabamba and the Aguas del Tunari Consortium*," March 2005

⁴⁵ I define privatization as the process whereby a prior state run service is bought by a private company to be run for profit. A more accurate term might be 'briberization' since, in the context of structural adjustment imposed by the World Bank and IMF, vital loans and aid are conditional on the state's acceptance of the terms of the privatization which closely resembles bribery, as Joseph Stiglitz argues in "*Globalization and its Discontents*," [2002]

⁴⁶ Brid Brennan *et al. Reclaim the Water, Achievements, Struggles and Visions from Around the World*, 2007

secure a future water source. Both projects ran into millions of dollars but the Miscuni was the most costly and heavily promoted. Apart from the fact that dams can be said to ‘choke the arteries’ of the earth, the now dissolved WCD (World Commission on Dams 1998) agreed in its framework, that dam-building projects alone have displaced an estimated 40-80 million people from their lands.⁴⁷ The World Bank attempts to portray itself as having learned lessons from mistakes it made in the past, in relation to its promotion of dam-building and given critiques of its policies for negatively impacting indigenous communities. However due to the poverty and indigenous background of many victims of the struggle for water access in Bolivia, this can be debunked and revealed as a public relations strategy.

Indigenous people comprise a majority of Bolivia’s population, mostly Quechua and Aymara, at 62% of the total⁴⁸. Of the urban population 50.9% live below the poverty line and factors including racial discrimination mean a disproportionate number of indigenous people, live in poverty in urban and especially severe poverty, in rural areas.⁴⁹ While many indigenous people have left ancestral lands and subsistence livelihoods as ‘*campesinos*’ in search of wage labour in urban locations, including Cochabamba or its outlying areas, the extent to which choices based on tougher environments and desperate economic necessity can sincerely be called free must be disputed. The economic and culturally homogenizing effects of globalization are trampling many indigenous communities’ connection to ‘la Pachamama’ characterized by respect for and responsibility towards the environment, including sources of water.⁵⁰

The right to water consists of a number of freedoms and entitlements including its affordability element⁵¹ which is relevant for discussing the problems of water access in Cochabamba, particularly the threat posed by privatization. Whilst there are certain instances where private involvement in water services or public-private partnerships can meet obligations such as affordability, under the right to water, this is unworkable internationally:

⁴⁷ International Rivers Webpage

⁴⁸ World Bank Webpage on Bolivia

⁴⁹ Ibid.

⁵⁰ Douglas Nakashima, *Water and Indigenous Peoples Conference Report*, ” 2001

⁵¹ It must be remembered, however, that in 1999/2000 there was no freestanding legal right to water.

unless there is a sudden redistribution of wealth, how can all the worlds' desperately poor people come to possess the purchasing power needed to sustain private water barons' demand for rising shareholder value? Moreover, and as a distinct issue to that of price hikes for those already connected, no discussion had taken place about the need, or the means by which, to connect poor neighbourhoods or *barrios* in the *Zona Sur* of Cochabamba, inhabited by the poorest, most marginalised people, some settled illegally.

After a punishing slew of privatizations, including gas, electricity, telephone service and the airline, which was a key element of the World Bank and IMF's structural adjustment of Bolivia and their neoliberal agenda, as a whole, Bolivians were ready to resist the water price hikes, that immediately ensued. It was not initially apparent the struggle would aim to end the contract and revoke the new laws, however in the wake of popular outrage and large street protests which successfully occupied the city plaza, the movement's vision enlarged. The state ramped up repressive measures in a response which symbolised how globalization is making the world secure for international capital and very insecure for people; tear gas and police beatings injured protestors. However as the government's stronghold slipped, the Left resistance gained renationalisation of the water system and Bechtel fled; but not without launching a million dollar lawsuit against Bolivia.⁵²

After the 'briberization' many *Cochabambinos* received at least a 35% increase in their water bills, conceded by the consortium, which had not and never would, invested, improved the service or begun the dam. In practice, with *all* the various ways the consortium could charge customers, some families were hit hard with total charge increases of 100% or even 200%, sometimes higher. For a worker living on the local minimum wage of \$60 a month such an increase represented a sizeable proportion of their earnings, meaning they might have had to spend \$15 out of their monthly \$60 just to maintain a supply of water from their tap. Jim Shultz recounts the story of Tanya Paredes, a mother of four who made a living knitting baby clothes. Her water bill rose from \$5 a month to nearly \$20 and the increase is what it cost her to feed her family for a week and a half. "What we pay for water," she exclaimed, "comes out

⁵² "*Bechtel v Bolivia: Details of the Case and the Campaign*," Democracy Center website

of what we have to pay for food, clothes and the other things we need to buy for our children.”⁵³

The UNDP (United Nations Development Programme) echoed by PAHO (the Pan American Health Organisation) recommends that water costs should comprise no more than 3% of monthly household income to avoid the many and severe human health impacts which follow expensive and unaffordable clean water.⁵⁴ Both organisations are an authoritative source of information but have no power to mandate policies for sovereign nations, or legal authority to regulate the private sector. The privatisation wrought changes to water pricing that was unworkable as well as unjust. Many couldn't continue paying their water bills on top of food and other necessities⁵⁵, reflecting the internal contradictions of the capitalist mode of production: to create a surplus for capitalists, workers are never remunerated the equivalent of the value they produce through their labour, ergo there is never enough consumer wealth to buy back the goods capitalism produces, without access to credit.

Tellingly, water does not spring to mind when we imagine the value-added, finished products aggressively marketed to all socioeconomic classes and accessible with credit cards. Unlike a designer handbag or plasma screen TV, water has a unique biological value which we cannot relinquish. This is what made the Ancient Egyptian civilisation emerge on the banks of the River Nile. With our sprawling, overcrowded metropolises requiring miles of pipes, sewers and treatment plants, city-dwellers rarely encounter watercourses in nature, freely available. If we did, we might be more inclined to categorise water like the air we breathe, as a gift of nature and equally inclined to question the way we have systematised, commodified and sold it for profit, in this case at rates, impoverishing, indebting or excluding users.

⁵³ This personal story is reproduced in an essay he wrote for the book, *'Troubled Water, Saints, Sinners, Truth and Lies about the Global Water Crisis'* by Anita Roddick and Brooke Shelby Biggs with essay contributors including Maude Barlow and Vandana Shiva, 2004; 22

⁵⁴ Human Development Report 2006. Beyond scarcity: Power, poverty and the global water crisis. UNDP, 2006

⁵⁵ Without spiralling further into poverty or debt.

Such a system, despite the intimidation unleashed, can breed resistance. The campaign to resist Cochabamba's extortionate water prices, The Coalition for the Defence of Water and Life or the *Coordinadora*, constituted a successful mix of workers, *campesinos*, students, youth, professionals and academics all ultimately united in their urgency to repeal the newly introduced laws, end the contract with the water consortium and return the utility to public ownership, nonetheless aware of its need for reform. The *Coordinadora* showed that subsistence based issues are capable of drawing broad based, cross-class support beneficial for campaigns to increase access to water and prefiguring the global support from ordinary people behind a human right to water.⁵⁶ These subsistence issues also, likely came to the forefront because of the changing structure of the proletariat in Bolivian society as argued by Oscar Olivera, executive secretary of the Federation of Factory Workers and one of the movement's icons.⁵⁷

The advent of more informal, precarious work and smaller factory forces has forced social justice seekers and anti-capitalists to circumvent traditional left-wing demands and forums around pay and working conditions. Bolivia has shown that water rights are an issue-based battleground on which the Left can win. However, as Jim Shultz points out in his article⁵⁸ ten years after the water war, reversing the privatization was just one battle won in the long war which must still be waged, to ensure equitable access to water for the Bolivian people. After renationalisation efforts were made to democratise the running of Semapa and grapple with the problems of unaccountable managers and allegations of corruption at all levels of the hierarchy. Recognition grew that a balance must be struck between the interests of those working for the service and its users without allowing any one interest group to have executive control. People were asked to vote for community representatives to sit on Semapa's board but fewer turned out to vote than had involved themselves physically in the protests.

The Cochabamba 'water war' notably stoked the fire of leftist political developments of serious import based on grassroots social movements and lead to wider realizations about the

⁵⁶ Daniel Moss, "At Last a Human Right to Water," *Yes Magazine*, 2010

⁵⁷ Oscar Olivera, "Cochabamba! Water War in Bolivia," 2004

⁵⁸ Jim Shultz, "The Cochabamba Water Revolt Ten Years Later," *Yes Magazine*, 2010

indispensable value, notwithstanding the fatal cost, of popular protest. Noam Chomsky explicates, in a discussion of the almost ubiquitous, practical dissolution of Magna Carta principles how one state fought to protect a commons resource; water:

“In Bolivia, the attempt to privatise water was, in the end, beaten back by an uprising that brought the indigenous majority to power for the first time in history.”⁵⁹

It was under the subsequent indigenous government with the MAS party (Movimiento al Socialismo) leader and now elected President Evo Morales that Bolivia formally submitted to the UNGA the resolution to agree on a human right to water. In response to the submission, states expressed displeasure over the circumvention of a simultaneous process in Geneva taking steps to recognise water as a human right. Nonetheless the Bolivian sponsored UNGA resolution gained consensus, albeit with a number of abstentions. The Bolivian people not only defied TINA (There Is No Alternative) ‘logic’ by reversing the briberization, they also voted into power, on a socialist platform, a government that would engender the right to water at the UN.

A decade after the water war and Bolivia was *the* nation to host the alternative to the Copenhagen summit, the Peoples Conference on Climate Change and the Rights of Mother Earth in the same city where Victor Hugo Daza was killed. At the same time industry is also using water available from local aquifers to extract minerals or heavy metals, such as foreign, (Canadian or U.S.) owned tin and silver companies in rural provinces, leaving local communities without sufficient water. Using the wealth created by extractive industries to benefit foreign multinationals, worsening resource depletion and global warming in the process and denying water for local social needs is the very antithesis of what Morales is said to represent and far removed from the aspirations of those who launched him to power. It could, however, be argued that Morales aspirations are constrained by an unenviable economic, and to some extent, isolated political position.

Attempts to use the wealth generated by mineral extraction to benefit the poor or to more evenly distribute such wealth outside the hands of executives and mineral barons is a kind of

⁵⁹ Chomsky, Noam, “*How the Magna Carta Became a Minor Carta, Part 1*” for the *Guardian*, Tuesday 24th July, 2012

justice but missing one crucial element, the ecological.⁶⁰ Without sufficient public resistance there will likely be speculative trading over water which would, according to the WDM (World Development Movement), imitate in its catastrophic effects on the poor, that of current speculative trading on food.⁶¹ The notion that water will become ‘the new oil’ and more expensive than the ‘black gold’ is bandied around as a warning signal but what does it actually mean in its implications? To answer this requires knowledge of the economy of oil and understanding of how our integrated, global economy depends on both a source of water and also, the continuing bedrock of our modern consumption patterns, oil.

⁶⁰ Marxists who advocate for nationalisation of these industries promoting them for a state-planned economy seem to forget the thread of ecologism in Marx’s theories, referred to in the next chapter.

⁶¹ WDM report, global water markets available here <http://www.wdm.org.uk/green-economy/global-water-markets>

A vast “tar sands” mining operation is underway, also known as “oil sands”. The unrefined resource is technically a mixture of sand, clay, water and bitumen and is being developed in the Boreal forest of Athabasca, Northern Alberta, Canada.⁶² It is perceived as the most ecologically destructive project currently being perpetrated.⁶³ The heavy crude energy source from tar sands, so-called because of their tar-like appearance is refined into “unconventional oil” and requires expensive, yet profitable production processes, employing new in-situ technologies such as SAGD (Steam Assisted Gravity Drainage).⁶⁴ This process is incredibly gas and water intensive⁶⁵ requiring between 2 to 4.5 volume units of water to produce each volume unit of synthetic crude (more so than open-pit mining) and creates a reckless carbon ‘footprint’ massively accelerating climate change.⁶⁶

Clean water is an essential element of healthy ecosystems. Analysis of this destructive process can illuminate upon prospects for just water access and effective governance, clarifying fundamental relationships humans have to nature, each other and the reasoning behind them. Considering the socio-political effects of Alberta’s tar sands exploitation, which, it is argued, systematically violates the rights of culturally distinct indigenous groups⁶⁷, also pertains to the study of water rights and campaigning to preserve the ecological commons. How do tar sands’ ‘development’ impact on local Dene, Cree and Métis peoples’ capacity to use potable water in accordance with their traditional trap-line cultures?

⁶² Oil Sands Truth, “Maps of Tar Sands Development,” -satellite image displaying waterways 26th April 2006, digitized by Petr Cizek, June 2008

⁶³ Clayton Thomas-Muller, IEN (Indigenous Environmental Network) “*World’s Biggest Climate Crime*,” January 2010 and UNEP (United Nations Environment Programme) world’s top 100 hotspots of environmental degradation. IBCC, *Canada’s Tar Sands: America’s #1 Source of Oil Has Dangerous Global Consequences*, 2008

⁶⁴ The Oil Drum, “*SAGD and Well Production from Oil Sands*,” January 2010

⁶⁵ WWF (World Wildlife Fund), “*Scraping the Bottom of the Barrel*,” 2008; 27

⁶⁶ James Hansen, *The New York Times*, “*Game Over For the Climate*,” May 9th 2012

⁶⁷ Jennifer Huseman and Damien Short, “*A Slow, Industrial Genocide*,” *The International Journal of Human Rights*, Vol. 16, No. 1, January 2012; 216-37

Canada, home to 70.8% of all tar sands reserves⁶⁸, has also been the most dogged opponent of the human right to water.⁶⁹ Canada's colonial history is beyond the remit of this thesis, however the development of the Albertan tar sands cannot be understood outside of the claim it amounts to genocide. First Nations' Peoples are living within a nation state whose power derived from usurpation of the original, indigenous sovereignty, and perniciously unjust⁷⁰ colonial processes, which arguably have transmuted, but not ended, subjecting contemporary Canadian indigenous people to description as the continuously colonized. It can, moreover, be persuasively argued that colonialism is innately genocidal and that the tar sands extraction, for *some* First Nations peoples, constitutes a "slow, industrial genocide".⁷¹

Power is essentially what is under scrutiny. Evoking the idea of rights, proposing their codification, and using them in legal challenge, is, arguably, a pragmatic tool employed by those with less power against the more powerful. Having a set of basic rights respected will improve an individual's (or community's) lot in life but does not entail a fundamental transformation of the power inequality that engendered the rights violations *ab initio*. Power is fundamentally reflected in control of land and resources:

"Control over land is power in its purest and most basic form because it involves control over food, and therefore the means of survival".⁷²

Control of water has parallel meaning in terms of survival and the word 'land' denotes also rivers and watercourses. Moreover, resource extraction has a long history as a motivating logic behind the 'elimination' of indigenous peoples and appropriation of their land. To access the buried fossilised energy, TNECs (Transnational Energy Corporations), backed by the state, have seemingly wrested land and power from local indigenous inhabitants and in so doing, undermined the right to water; a claim inviting justification.

⁶⁸ World Energy Council, "2010 Survey of Energy Resources," Used by permission of the World Energy Council

⁶⁹ *Climate and Capitalism*, March 17th 2012

⁷⁰ Claudia Card, "Genocide as Social Death," *Hypatia*, vol. 18, 1; 66

⁷¹ Op. cit. no. 6

⁷² Lotte Hughes, *The No-Nonsense Guide to Indigenous Peoples*, 2003; 59

The capacity to ensure human rights generally, and specifically, indigenous rights to water, relies on practical stewardship of a landbase with sufficiently healthy watercourses. Klaus Toepfer, Executive Director of UNEP, in a statement to the Commission on Human Rights (2001), declared:

“Human rights cannot be secured in a degraded or polluted environment. The fundamental *right to life* is threatened by soil degradation and deforestation and by *exposures to toxic chemicals, hazardous wastes and contaminated drinking water*” (emphasis added).⁷³

Even without fulfilment of Treaty and common law aboriginal title rights⁷⁴ indigenous peoples should be protected by human rights conventions Canada has ratified, the obligations wherein extend to all within the state’s jurisdiction, notwithstanding the principle of “free, prior and informed consent”.⁷⁵ Canada is supposed to enforce its own water laws.⁷⁶

The evidence that tar sands operations create hazardous wastes and toxic chemicals, dumped in vast tailings “ponds” which leach downstream, contaminating water sources used as a social resource for drinking or fishing, needs examining. The pollution threat from these tailings ponds upon wildlife, especially in causing bird mortality, has been documented.⁷⁷ However I am bound by the thematic lens of the *human* right to water to ascertain threats in water used by humans, mindful that rights realization depends on ecosystem health. I rely on rigorous science without underestimating the usefulness of narrative truths.

First Nations elder, Elsie Fabian, close resident of the Athabasca River, states that:

⁷³ Dinah Shelton, “*Human Rights, Health and Environmental Protection*,” WHO, 2002; 4

⁷⁴ Jeremie Gilbert, “*Historical Indigenous People’s Land Claims: A Comparative and International Approach to the Common Law Doctrine on Indigenous Title*,” *International and Comparative Law Quarterly*, Vol. 56, 3, July 2007;583-611

⁷⁵ UNDRIP, (UN Declaration on the Rights of Indigenous Peoples 2003)

⁷⁶ Andrew Nikiforuk, “*On the Table: Water, Energy and North American Integration*,” October 2007; 18

⁷⁷ Daniel Glick, “*Tar Sands Trouble*,” *National Wildlife*, Vol. 50, Issue 1

“The River used to be blue. Now it’s brown. Nobody can fish or drink from it. The air is bad. This has all happened so fast”.⁷⁸

Local First Nations peoples told National Wildlife Foundation Senior VP, Jeremy Symons, that they “no longer eat fish from the Athabasca River for fear of contaminants”⁷⁹ conflicting with what Canada’s Natural Resources Minister, Joe Oliver, claims. He promoted the tar sands as ‘ethical oil’ stating,

“(tar sands) land is uninhabitable...uh...by human beings. So, you know, no community is being disrupted”.⁸⁰

People and Planet call his claim an “insult to thousands of First Nations communities” from a politician representing an industry which is “destroying their traditional ways of life”.⁸¹

The toxic tailings “lakes” are located close to the Athabasca River, in some places metres from the bank, meaning a breach of the dams would have a devastating effect on the river and Mackenzie basin.⁸² The possibility that toxic sludge and wastewater can leak out and lack of information on how toxic materials within the tailings ponds are contained raises concerns.⁸³ Furthermore an Alberta government review deeming inadequate, the province’s ability to monitor and enforce environmental standards is alarming.⁸⁴ The industry association collects minimal data and it and governmental monitoring cannot be trusted whilst independent evaluation struggles to keep pace with operational scope.⁸⁵

Provincial authorities offer limited data, seeming committed to celebrating the economic return from tar sands, whilst engaging in “green washing” on the industry’s capacity to improve its environmental and human rights record.⁸⁶ Nonetheless scientific research has

⁷⁸ C, Thomas-Muller, “*Tar Sands: Environmental justice, treaty rights and Indigenous Peoples,*” *Canadian Dimension*, 2008

⁷⁹ Op. Cit. no. 13

⁸⁰ Max Paris, *CBC News Inside Politics Blog*, September 27th 2011

⁸¹ *People and Planet*, October 2011

⁸² Op. cit. no. 15; 16

⁸³ Ibid.

⁸⁴ “*Investing in our Future: Responding to the Rapid Growth of Oil Sands Development*”

⁸⁵ Andrew Nikiforuk, “*Nikiforuk Pores Over Royal Society’s Oil Sands Study,*” *The Tyee*,

⁸⁶ “*Responsible Actions: A Plan for Alberta’s Oil Sands,*” Government of Alberta, February 2009

been done, corroborating First Nations' accounts of contaminated water sources used for drinking and fishing. An authoritative study published by PNAS (Proceedings of the National Academy of Sciences) provides evidence of contamination, and more than posing a causal link, concludes water toxicity can be sourced back to tar sands operations.⁸⁷ This study is reinforced by the findings of Timoney *et al.* whose 2007 work on behalf of the Nunee Health Board, was reported in the New York Times.⁸⁸

Timoney demonstrates that pollution of the Athabasca River, Lake and tributaries;

“comes from licensed discharges; from above-ground and below-ground pipeline leaks and breaks; and from tailings pond leaks that are not captured and returned to the tailings ponds”.⁸⁹

He has conducted, with colleagues, more extensive investigations into contamination of waterways and degradation of Athabasca's ecosystem, finding increased concentrations, in the river sediment, of poly aromatic hydrocarbons (PAHs) which are known carcinogens.⁹⁰ This should mandate a meaningful response to cancer rates, especially incidence of aggressive types of cancer, among local indigenous communities. The work of Dr. John O'Connor who addressed this cancer anomaly was discounted,⁹¹ as Canada abjures the discernible interconnectedness between the rights to water, health and life.

Indigenous experiences and environmental knowledge, stemming from cross-generational familiarity with local watercourses could be drawn upon. Indeed,

⁸⁷ Erin N. Kelly *et al.*, “Oil sands development contributes elements toxic at low concentrations to the Athabasca River and its tributaries,” PNAS, 2nd July 2010

⁸⁸ Ian Austen, “Study Finds Carcinogens in Water Near Alberta Oil Sands Projects,” *The New York Times*, November 9th 2007

⁸⁹ Kevin Timoney, “A Study of Water and Sediment Quality Related to Public Health Issues,” Nunee Health Board Society: Fort Chipewyan, Alberta: Canada, 11 November 2007

⁹⁰ Kevin Timoney and Peter Lee, “polycyclic aromatic hydrocarbons increase in Athabasca River Delta sediment: temporal trends and environmental correlates.” *Environmental Science and Technology*, May 2011

⁹¹ Commonwealth Advisory Bureau, Opinion, “Huseman and Short Reply to Professor Hrudehy” February 2012; 5

“People living directly from the land and water around them are acutely aware of indications that things are right or wrong with the natural world (Usher *et al.* 1992:114).”⁹²

The neglect of traditional environmental knowledge, which could add to the evidence-based ‘portrait,’ is disquieting in the lacunae it contributes to, especially as local communities are stricken by the personal tragedies of cancer-related deaths.⁹³

Criticisms of the PNAS study, implying the methodology was not scientific enough have been alleged and rejected: the 2011 Alberta government panel agreed with the conclusion of Kelly *et al.* stating

“There is nothing to suggest that the methods they used in sample collection were not scientifically rigorous”.⁹⁴

Prof. Hrudehy, informs us that,

“None of the metals concentrations measured in the 2010 PNAS paper (...) exceeded any Guidelines for Canadian Drinking Water Quality”.⁹⁵

This is not a reliable indicator since Canada has no guidelines for ensuring drinking water quality. Moreover the U.S. Environmental Protection Agency has not established that there are safe levels for short-term PAH exposure.⁹⁶ Prof. Hrudehy also remains silent on the industry’s unsustainable draining of watercourses to meet immense demands for water.⁹⁷

⁹² Parlee *et al.* “Social-ecological thresholds in a changing boreal landscape: insights from Cree knowledge of the Lesser Slave Lake region of Alberta, Canada.” *Ecology and Society*, 2012 17(2): 20

⁹³ Mike Mercredi, Radio4all.net

⁹⁴ Water Monitoring Data Review Committee, “Evaluation of Four Reports on Contamination of the Athabasca River System by Oil Sands Operations”

⁹⁵ Commonwealth Advisory Bureau, Opinion, “Dousing inflammatory rhetoric with cool reason – an analysis of: Throwing petrol on a fire: the human and environmental cost of tar sands production,” January 2012; Footnote 11

⁹⁶ National Primary Drinking Water Regulations, “Technical Factsheet on Polycyclic Aromatic Hydrocarbons” EPA, USA

⁹⁷ Mary Griffiths *et al.* “Troubled Waters, Troubling Trends” Pembina Institute, May 1st 2006; Foreward

Why do a minority profit from tar sands, with its pollution of once crystal-pure waterways, when the world's majority would benefit from forest preservation and a moratorium?⁹⁸ It is not only local indigenous groups harmed by the tar sands, (although effects on them are uniquely severe) but all people are affected when we consider how exploiting tar sands is almost singlehandedly bringing humanity closer to runaway, even apocalyptic, climate change.⁹⁹ Some desirous of energy from oil seem to benefit in the short term and much of the demand for the tar sands comes from the US, seeking to avoid Middle-Eastern regimes as sources of petroleum, to "fuel North America's vast fleet of cars".¹⁰⁰

The adjacent custom, leading to plans for huge pipelines to transport the fuel to Texas, provoked civil disobedience¹⁰¹ as they threaten damaging oil spills.¹⁰² The US government shelved plans for Keystone XL, but campaigners warned this represented a victory¹⁰³ within an ongoing struggle¹⁰⁴ and pressure must be exerted on politicians to reject the plans entirely. How could TransCanada's Keystone XL pipeline menace the right to water? The pipeline is proposed to traverse the Ogallala aquifer, in the U.S. High Plains, which is "the source of water for 27% of U.S. irrigated land".¹⁰⁵ Chemicals enabling passage of heavy crude are corrosive, likely damaging the pipe, causing leaks and threatening pollution of the Ogallala. In Texas, protestors against the incipient construction of the pipeline have been detained.¹⁰⁶

Attacks on liberty signify how protestors, using their bodies as a locus of political resistance, have become physical sites of oppression; more severely true of the biological warfare¹⁰⁷ waged upon the bodies of tar sands' cancer victims. Intimidation of peaceful defiance is

⁹⁸ Indigenous and environmental activists have long been calling for a moratorium, "*Deh Cho leader calls for tar sands moratorium*," Polaris Institute, 2nd February 2007

⁹⁹ Bill McKibben, "*Global Warming's Terrifying New Math*," *Rolling Stone*, July 19th 2012

¹⁰⁰ *Dominion, Tar Sands Issue*, Issue #48, August 2007;4

¹⁰¹ Kandi Mosset, "*Native American and Canadian First Nations to Take Part in Largest Act of Civil Disobedience to Stop Keystone XL Pipeline*," *It's Getting Hot in Here*, August 27th 2011

¹⁰² Dr. John Stansbury, "*Analysis of Frequency, Magnitude and Consequence of Worst-Case Spills from the Proposed Keystone XL Pipeline*," University of Nebraska-Lincoln 2011

¹⁰³ Mark Hertsgaard, "*The Keystone Victory*" *The Nation*, December 5th 2011

¹⁰⁴ "*We Won the Battle not the War: IEN Statement on the Keystone XL Pipeline Decision*" *Intercontinental Cry*, November 15th 2011

¹⁰⁵ Sandra Postel, "*Our Oversized Groundwater Footprint*" *National Geographic*, August 13th 2012

¹⁰⁶ Andy Rowell, "*Support the KXL Protestors!*" Oil Change International, 29th August 2012

¹⁰⁷ Mike Mercredi, "*It's Killing Us Off*," Oil Sands Truth, reported by Kevin Crush, 24th November 2008

indicative of powerful governments resort to repression, even violence, to protect corporate interests, or spuriously, ‘national security’. Furthering the concept of ‘human security’ could be beneficial: Violent threats to human security, which are explicitly illegal, are expressed in the Crimes against Peace. Extensive destruction of ecosystems or Ecocide *is* the fifth missing Crime against Peace: it is within the context of groundbreaking research into the concept that the tar sands must be reimagined.¹⁰⁸ A law of Ecocide could pierce the “corporate veil” and excoriate profitability from the destruction.

Where does value come from? Money, a form of social power, has no inherent value; it is a fiction we assign value to. The way this fiction now operates, though once used to develop civilisation, is now driving and accelerating Ecocide bringing us closer to a ‘Nature Crunch’.¹⁰⁹ Energy sources, unlike money, serve a function, possessing a non-illusory value we can measure, such as horsepower. It has been estimated that the value of all the oil humanity now uses is the equivalent to having 22 billion slaves labouring constantly.¹¹⁰ We comprehend by this equivalency that oil is an incredibly concentrated form of energy and that labour and the Earth’s resources are capable of generating energy and value. Energy has always been paramount to biological survival and capacity to thrive, e.g. energy from food and highly valuable.¹¹¹

In “*Small is Beautiful*,” E. F. Schumacher refers to Marx’s ideas on value as erroneous: In our state of alienation from the Earth (and the solar system) we forget that she is the primary provider of life, resources and energy, now sold on financial markets. Consequently we are,

“inclined to treat as valueless everything that we have not made ourselves. Even the great Dr. Marx fell into this devastating error when he formulated the so-called labour theory of value”.¹¹²

¹⁰⁸ Anja Gauger *et al.* “*Ecocide is the missing 5th Crime Against Peace*,” The Ecocide Project, Human Rights Consortium, School of Advanced Study, July 2012

¹⁰⁹ George Monbiot, “*This stock collapse is petty when compared to the nature crunch*,” the *Guardian*, 14th October 2008

¹¹⁰ Mark Boyle, “*The Moneyless Man: A Year of Freeeconomic Living*,” 2010; 10

¹¹¹ Not to be confused with expensively priced; friendship, singing, curiosity... are (in)valuable but cost nothing.

¹¹² E. F. Schumacher, “*Small is Beautiful*,” 1974; 11

The working classes add value to e.g. timber, by turning it into furniture, but they do so with the raw material of trees provided by nature. However, Susan George highlights an instance where Marx attempted to correct others of this error. She quotes from his “*Critique of the Gotha Programme*,” where Marx states,

“Labour is *not the source* of all wealth. *Nature* is just as much the source of use values...as labour, which itself is only the manifestation of a force of nature...” (emphasis in original).¹¹³

To link this discussion of nature as the primary source of use values and wealth back to the pollution wrought by the tar sands, it must be understood that we have treated the value of fossil fuels, million years old sunlight energy, as income items and not as capital. Kalle Lasn, *Adbusters*’ founder, expounds,

“We got rich by violating one of the central tenets of economics: thou shall not sell off your capital and call it income”.¹¹⁴

E. F. Schumacher evinced this argument, reasoning that if we treated fossil fuels as capital, “we should be concerned with conservation” and “minimise their current rate of use” that “the money obtained from...these irreplaceable assets” should be “devoted exclusively to the evolution of production methods and patterns of living which do *not* depend on fossil fuels or depend on them only to a very slight extent”.¹¹⁵ We have not heeded Schumacher, or knowledge that fossil fuel combustion causes global warming, such that, even if they were not a finite resource, we would still need to find alternative sources of energy.

Instead, with increasing technological capacity,

“Over the past forty years we have clear-cut the forests, fished rivers and oceans to the brink of extinction and *siphoned oil from the Earth as if it possessed an infinite supply* (emphasis added)”.¹¹⁶

¹¹³ Michael Goldman “*Privatizing Nature: Political Struggles for the Global Commons*,” 1998; Preface

¹¹⁴ Kalle Lasn, “*Hey President Obama*,” *Endgame Strategies* #82 March 24th 2009

¹¹⁵ Op. cit. no. 51; 12

¹¹⁶ Op. cit. no. 53

Tar sands ‘developments’ result from treating as income, what is logically natural capital and from our attitude to nature as separate from us; a foe to be dominated, rather than the force of which we are a part and from which we manifest. This is only achieved with evermore extreme energy production processes e.g. SAGD, one indicator of how the human *status quo* is behaving in ways analogous to a virus or parasite, and not a more evolved life form: A predator like a lion, will not expend energy chasing prey she is unlikely to catch since the energy gained from food ingested must outweigh her expenditure, to avoid starvation.¹¹⁷

The analogy signposts what it is about the extreme energy trend, with the tar sands as an example, which makes it so extreme. The concept ‘Energy Return on Investment’ (EROI) refers to the discrepancy between the amounts of energy invested to undertake operations, compared with the amounts of energy gained by the processes. This figure has decreased significantly which means that far more energy is now required to drill and maintain operations, for a smaller result, yielding a much lower ‘net energy’ amount. The trend was visible with conventional extraction methods as mining ever deeper into the ground for coal or deepwater drilling for oil, require greater inputs of energy for a smaller return.¹¹⁸ It is now even more apparent with the distinct technologies required to scrape the fossil fuel barrel, with enough ‘net energy’ to make it profitable.¹¹⁹

Extreme energy will likely continue to be profitable by comprising a greater share of total GDP which means contraction of other sectors of the economy: crude estimates show the fraction of global GDP representing the energy sector has more than doubled in recent years.¹²⁰ As more productive (socially valuable) sectors of the economy shrink, swallowed up by Shell *et al*, governments will be inclined to cut state expenditure, gutting public services, aside from demonstrably failed and politically motivated ideologies behind austerity. Human welfare could suffer and violations of subsistence rights, with deeper attacks on civil liberties, seem on the horizon, as protest is increasingly criminalised. The human right to water challenges Western consumptive habits, sustained by water-intensive oil dependence, and is,

¹¹⁷ “*Energy, Cuts, Climate: A Fork in the Road,*” *Frack Off, Extreme Energy Action Network*, March 30th 2012, example used is a cheetah.

¹¹⁸ Jeremy Wakeford, “*Energy Return on Energy Invested,*” *Engineering News*, 15th June 2012

¹¹⁹ *Ibid.*

¹²⁰ *Op. cit.* no. 56 See pie chart break down.

arguably, incompatible with a growth-orientated economy: general, infinite compound growth may be impossible, and not necessarily desirable.¹²¹ EROI is an important concept to consider in theorising the democratisation of economic decision-making, showing that extreme energy may threaten not only rights to safe water, but various entitlements and freedoms.

¹²¹ Op. cit no. 39

Chapter 4 Drill, Baby, Drill: Fracking with the Water Supply

Many U.S. states have become a veritable industrial wasteland with the growth of another, extreme energy extraction process, a method of drilling for natural gas, hydraulic fracturing; known colloquially as “fracking”. It involves drilling deep into layers of shale rock, injecting at high pressure, an immense amount of water mixed with chemicals, some of them known toxins, creating a gel or foam, to fracture the rock and release the gas. As Food and Water Watch’s Wenonah Hauter explains,

“Fracking is basically like exploding a giant pipe bomb deep underground using millions of gallons of fresh water, sand, and chemicals”.¹²²

The USA contains the largest known unconventional natural gas field in the world, today.¹²³ Exploitation of methane from natural gas through new drilling methods like fracking has boomed in the US, since the early 2000s and is expected to rise.¹²⁴

Hailed as an answer to the USA’s quest for ‘energy independence,’ the gas is also championed as a cleaner, greener form of energy because, when burned, it releases smaller amounts of carbon dioxide than coal or oil. Yet there are warnings shale gas “may aggravate rather than mitigate global warming”.¹²⁵ There are claims it is just a transitional fuel¹²⁶, advantageously tiding us over until we generate renewable energy with commensurate capacity to meet our rapacious demand for fossil fuels. Our demand is so great that the scaling up of renewable energy technologies humans have knowledge of, e.g. wind and photovoltaics, is a mammoth challenge, although the American West has great potential for renewables.¹²⁷ The claim that fracking is a ‘bridge’ to a renewable future appears largely unjustified; MIT’s Henry Jacoby cautions,

¹²² Interview with Hillari Dowdle, “*The New Food Heroes*,” *Vegetarian Times*, September 2012

¹²³ “*An Unconventional Bonanza*” *The Economist*, July 14th 2012; info graphic from International Energy Agency

¹²⁴ *Annual Energy Outlook*, US Energy Administration Information, June 2012

¹²⁵ Robert Howarth, *et al.* Open Letter, “*Methane and the greenhouse-gas footprint of natural gas from shale formations*,” *Climatic Change*, 13th March 2011

¹²⁶ “*The Future of Natural Gas*” Massachusetts Institute of Technology (MIT), June 25th 2010

¹²⁷ Jessica Goad *et al.* “*The Vast Potential for Renewable Energy in the American West*,” Think Progress Climate Blog, August 6th 2012

“People speak of natural gas as a bridge to the future, but there had better be something at the other end of the bridge”.¹²⁸

We cannot ignore the environmental and social effects of fracking. Furthermore, alongside profligate use of water, scientific research has been done evaluating personal stories of water contamination by the industry and must be examined. Unfounded claims of sickness and contamination from fracking warrant investigation and a growing number of stakeholders; environmentalists, academics, and affected communities among them, are responding to the fracking boom with resounding opposition.¹²⁹ The U.S. government has not unified policy on, or substantively supported, the renewable energy sector through federal investment, leaving it to struggle at the ‘invisible hand’ of the market. However, with the fossil fuel industry they are not nearly so *laissez faire*, as oil and gas companies are lavished with state subsidies¹³⁰ and their techniques, like fracking are exempted from the Safe Drinking Water Act: The Bush administration was the most closely tied to the industry, the Republican rallying cry a persistent, “drill, baby, drill!”¹³¹

Citizens cautious of fracking have been dismissed as scaremongering¹³² while the 2004 EPA (Environmental Protection Agency) report¹³³ supposedly assuring that fracking posed no threat to groundwater, seems to have falsely assuaged fears over contamination of residential water supplies. It also appears to arm proponents who persist in referring to it despite the fact its assertions have subsequently been challenged. The report’s logic is deplored by EPA’s whistleblower Weston Wilson (featured in Oscar-nominated documentary *Gasland*) who cannot fathom how the EPA made an unsound deductive leap from admitting the toxicity of chemicals used in fracking, to concluding they cannot pose a water risk.

¹²⁸ Vicki Ekstrom, “*A Shale Gas Revolution?*” MIT news, January 3rd 2012

¹²⁹ Note July 28th 2012 actions and the global “frackdown” planned for 22nd September; Mark Schlosberg, “*Are You Down With the Global Frackdown?*” Food and Water Watch, August 7th 2012

¹³⁰ See predictions of National Renewable Energy Laboratory and Michael Parks, “*Why is the U.S. Crushing Clean Energy Growth and Investment Projections?*” Solar Mosaic, July 2012

¹³¹ Terry Lyn Karl, author of “*The Paradox of Plenty: Oil Booms and Petro-States*,” being interviewed for the documentary, “*A Crude Awakening*”

¹³² Brad Gill, “*State Senate Has Let Down New Yorkers*,” Executive Director, New York Independent Oil & Gas Association (IOGA) Press Release, August 4, 2010

¹³³ “*Evaluation of Impacts to Underground Sources of Drinking Water by Hydraulic Fracturing of Coal Bed Methane Reservoirs Study*,” EPA, June 2004

As a WHO groundwater monograph states,

“*Virtually any aspect of industrial operations* has the potential to release chemicals, though some processes are more likely than others to be of consequence when considering the vulnerability of groundwater. Organic and inorganic contaminants may reach groundwater most readily as a result of discharge to the ground surface and subsequent leaching through and from soils, or through subsurface releases from tanks, ponds, underground pipelines, injection wells, and similar structures (U.S EPA 1999, Canter and Knox 1987” (emphasis added).¹³⁴

It can therefore be argued that some risks are not *peculiar to fracking* as threats associated with well integrity are intrinsic to drilling into the Earth’s surface and industrial production of waste. Well longevity or lack thereof is a fundamental problem for the gas industry, as is well abandonment. Environmentalists contend that the gas industry has long been implicated in threats to human health via water contamination and it should be noted how the distinct process of fracking warrants isolation, without detracting from the insalubrious behaviour of, and disturbing normality of accidents and leaks, within the industry as a whole.

Wells have been fracked close to families’ homes, sometimes virtually in their back yards. In the US, unlike in European nations where mineral rights often belong to the state¹³⁵, owning the land may or may not equal ownership of the mineral rights. Gas companies have approached small landowners for the mineral rights, paying them off, or ensuring landowners without mineral rights sign a surface-use agreement with a non-disclosure clause, preventing them from going public. Some people, like Laura Amos, have broken the imposed silence.¹³⁶ Contamination cases are an indictment of the lack of consent-based consultation procedures typifying the gas companies’ *modus operandi* and further force us to question a system based on the primacy of states as duty-bearers, when the private sector poses risks, which state and underfunded environmental agencies seem increasingly powerless to manage.

¹³⁴ Christopher Teaf, *et al.* (Schlag G *et al* eds) “*WHO Monograph on Characterization and Mitigation Of Groundwater Contamination in Recharge Areas*,” 2001, Chapter 11; 4

¹³⁵ Andrew Turley, “*European Fracking Boom Doubtful*” *Chemistry World* 18th October 2011

¹³⁶ Laura Amos, Earthworks Voices Webpage

Gas companies are incredibly secretive about chemicals used; defending them as trade secrets, necessary to remain commercially competitive. Despite this, information has been compiled about fracking chemicals which range from the pronounceable, but no less dangerous, benzene to the almost unpronounceable and carcinogenic, nitrilotriacetic acid. The companies, e.g. Encana or Halliburton, cannot know the effects of how mixtures of chemicals react to varying organic environments; the “synergistic effect”.¹³⁷ Industry regulation and monitoring has not evolved in tandem with technological developments and as Dr Theo Colburn emphasizes, monitoring cannot be effective without disclosure of chemicals used.¹³⁸

As admitted by the EPA 30-40% of ‘fracking fluid’ returns as ‘flow back’ which can create hazards above ground while the majority do not return and will not biodegrade. Where does it migrate? As presented to the House of Representatives Committee on Energy and Commerce (2011)¹³⁹ fracking involves hundreds of chemicals and heavy metals, some known carcinogens, included in the list of ten chemicals of major public health concern according to the WHO; benzene, cadmium and lead. Fracking creates glycol-ethers (solvents commonly used in paints) and releases volatile compounds including PAHs. Many chemicals used are named by companies, according to their function in the process, such as “corrosion inhibitors,” “friction reducers” and “oxygen scavengers” insidiously obscuring their deleterious properties.¹⁴⁰

Aside from the ultimate whereabouts of fracking fluids, what is released into the air? As another excerpt from the WHO monograph makes clear, airborne compounds can ultimately pose a risk to groundwater because of local meteorology,

“High vapour pressure indicates that a chemical will favour volatilisation, and spilled materials may be *lost to air* from water or soils, as opposed to leaching to groundwater. Local and regional meteorology will exert effects on whether or to what extent these or other

¹³⁷ Meek *et al.* “Risk assessment of combined exposure to multiple chemicals: A WHO/IPCS framework.” *Regulatory Toxicology and Pharmacology*, 60.2 S1-S14.

¹³⁸ Featured in documentary, “Gasland,” Josh Fox, 2010

¹³⁹ *Chemicals Used in Hydraulic Fracturing*,. 2011. United States House of Representatives Committee on Energy and Commerce.

¹⁴⁰ Op. cit. no. 17

airborne materials may be subject to later atmospheric "washout" by precipitation, and *subsequent re-deposition on the ground in complexed form, which then is available for future soil leaching processes that may contaminate groundwater*" (emphasis added).¹⁴¹

Methane (CH₄) is a gaseous compound which comprises the majority of natural gas. About 3.6% to 7.9% of methane from shale-gas production "escapes to the atmosphere in venting and leaks over the lifetime of a well (described as) fugitive methane emissions"¹⁴² some of which are released with the return of flow-back fluids, seen bubbling up around well heads. Methane can be transported in water but releases on contact with air and is easily ignited. Burning methane produces noxious gases and it is approximately 21 times more potent a greenhouse gas than carbon dioxide (CO₂).¹⁴³ The environmental movement could be said to have suffered from a reductive, oversimplified focus on carbon dioxide to the exclusion of other factors.

For Ms. Amos, fracking by Encana created a geological connection to her water well, which upon testing contained methane. She contracted a rare adrenal gland tumour medically attributed to 2-butoxyethanol, a chemical the company denied, but *did* use.¹⁴⁴ In this case contamination probably occurred by migratory fracking fluids, deemed of particular risk in "tectonically active areas with mapped faults, earthquakes and lineament features".¹⁴⁵ However, rain deposition might further explain incidences of methane leached to water wells. Quoted above is a PNAS study, concluding that "concentrations (of methane) were substantially higher (17 times on average) closer to natural gas wells".¹⁴⁶ Aware that naturally-occurring methane exists, it nonetheless causally links methane found in unsafe levels (beyond 28mg) in wells in North-eastern Pennsylvania and upstate New York, with fracking. A 2006 USGS (United States Geological Survey) study¹⁴⁷ detected numerous samples of methane from water wells in West Virginia, and a U.S. Forest Service study from

¹⁴¹ Op. cit. no. 13; 5

¹⁴² Op. cit. no. 4

¹⁴³ Ibid.

¹⁴⁴ Op. cit. no. 15

¹⁴⁵ Osborn et al, "*Methane Contamination of Drinking Water Accompanying Gas Well Drilling and Hydraulic Fracturing*," PNAS, 2011; 8174

¹⁴⁶ Ibid; 8173

¹⁴⁷ USGS, "*Methane in West Virginia Ground Water*," 2011

2011 demonstrated damage of deciduous forest in the state, by application of fracking wastewater.¹⁴⁸ Given the similarities between living organisms, effects on plant and animal life have implications for effects on human beings.

The burden of proof is misplaced. As opposed to requiring fracking companies to prove beyond all reasonable doubt that their processes pose no risk to groundwater, ergo no risk to human health, it is victims of gas drilling who are being burdened with proving deterioration of their health is due to contamination from the industry; an unjustly onerous task. Although practices reducing risks, like banning open-pit storage and diesel use are welcome, a moratorium and the creation of 'frack free' zones is required if we are to prioritise human health, water rights and, in respect of global warming, "get off the collision course on which we are moving with ever-increasing speed".¹⁴⁹

Engaging the US public on fracking and the need to respond to climate change could prove difficult.¹⁵⁰ However through a growing rate and extremity of global warming induced weather events, climate change is becoming more tangible to Americans. Pressure is being exerted on stalled plans for the potentially catastrophic extension of fracking to New York, with its supply of clean water to millions of New Yorkers derived from the Catskill and Delaware watersheds.¹⁵¹ Campaigners have spent money on an advert¹⁵² targeting New York's governor, Andrew Cuomo, to attempt to counteract heavy lobbying by the gas industry which also emphasizes its job creation. This fact, when cited as justification tends to portray exploitation as manna-like opportunity. Moreover, are all other impacts to be forgotten in bowing down to the sacred cow of job creation? The water-intensive fracking process competes with agricultural needs for water irrigation and jobs lost in agricultural and tourism sectors are not accounted for, suggesting projected job numbers are exaggerated.¹⁵³

¹⁴⁸ Shea Gunther, "*Fracking wastewater devours all life in West Virginia forest*," Mother Nature Network, August 6th 2011

¹⁴⁹ E. F. Schumacher, "*Small is Beautiful: Economics as If People Mattered*," 1974; 12

¹⁵⁰ Andrew Revkin, "*Americans Polarized on Climate, Tuned Out on Fracking*," The New York Times, June 19th 2012

¹⁵¹ New York City Environmental Protection, *Drinking Water Supply and Quality Report 2011*. NYC

¹⁵² New Yorkers Against Fracking, "There's No Safe Fracking Governor Cuomo," 2012

¹⁵³ "Exposing the Oil and Gas Industry's False Jobs Promise for Shale Gas Development," Food and Water Watch, 2011

Allusion to job creation hides company profit motives and the unequal distribution of shale gas wealth. Opposition to ending slavery was vociferous, on the basis that it would cripple the economy. As Tony Benn iterates,

“The *Economist* in 1848 had a leading article...saying you cannot abolish the slave trade because there are all these blacks in Africa with nothing to do and they are needed in the plantations in America”.¹⁵⁴

The sentiment is echoed by ‘job creation’ fracking apologists, imploring us to pander to economic demands for growth and fossil fuel dependence; giving the otherwise “unwashed masses” an experience of, not just a sermon on, the ‘nobility’ of the protestant work ethic.

Although qualitatively different from slavery, climate change is predicted to threaten major cities with flooding from rising sea levels. Inherent in the coming vicissitudes is an exacerbation of deprivation resulting from structural economic inequities, for millions of people, especially in the Global South but also in Western nations. Moreover, to quote a recent PNAS study contributed by James Hansen,

“Changes of global temperature are likely to have their greatest practical impact via effects on the water cycle”.¹⁵⁵

Over half the US is currently enduring the worst drought in fifty years¹⁵⁶ and it is predicted it could create conditions reminiscent of the 1930’s Dust Bowl, or even worse, with climate change exacerbating existing problems:

“With the temperature amplified by global warming and ubiquitous surface heating from elevated greenhouse gas amounts, extreme drought conditions can develop”.¹⁵⁷

¹⁵⁴ In an Interview with John Rees in “*Anti-Imperialism: A Guide for the Movement,*” Bookmarks Publications, 2003;10

¹⁵⁵ James Hansen *et al.* “*Perception of Climate Change,*” PNAS, March 29th 2012; 8

¹⁵⁶ Mark Svoboda, See weekly updates on Thursdays from US Drought Monitor, National Drought Mitigation Centre

¹⁵⁷ Op. Cit. no. 34; 8

Against this backdrop of drought, the vast use of water intrinsic to fracking, with its concomitant polluting characteristics and drought-worsening escalation of global warming, via greenhouse gases, renders the process irrational and a threat to the human right to water. Depletion of all fossil fuels, without any energy sources to replace them, could threaten human civilisation, however, pollution and waste of our sources of water could impact the Earth's carrying capacity for human and other species of life itself; a scenario which no amount of human rights theory can save us from, if it fails to lead to action.

Chapter 5 An American Nightmare: Corporate Water Grabs

The USA is facing water crisis with diverse characteristics. North America's vast system of water delivery to densely populated cities is desperately in need of renovation. American wages have stagnated¹⁵⁸ the tax system is 'just barely progressive'¹⁵⁹, 8.3% are unemployed,¹⁶⁰ poverty has increased and inequality is high. American workers are now obviously being nickel and dimed,¹⁶¹ the middle classes sorely pinched, while the profits of giant corporations soar, and when banks fail, they are bailed out with taxpayer dollars. The very element of risk, which is supposed to justify the current system of surplus capital accumulation, has been excised and shouldered by labour. The North American continent is sharply divided between the 1 and the 99 %. As David Harvey encapsulates, we are undergoing the "socialization of risk".

It is in this climate that those who can least afford to pay for renovation of state and nation-wide water systems are being asked precisely to do so. Instead of creating a federal fund dedicated to water system renewal, as advocated by Food and Water Watch,¹⁶² creeping privatization has occurred and is promoted as necessary to make the requisite investment needed for renewal. Yet private water companies are not philanthropic organisations, they exist to make a profit; this is their sole legal mandate. They emphasise the expertise and capital at their disposal, but then invest only on the basis of guaranteed return, requiring the raising of water rates, often before any financial input is made. In some cases they don't make any investment, the state and the water 'customers' do; the only thing the company makes is money.

The increasing of value to shareholders, as opposed to ensuring human rights or welfare, is private water companies' *raison d'être*. Privatization, because of costs to water users and

¹⁵⁸ Gary Burtless, Brookings Institute, *Employment Gains Keep Pace with Population Growth but Leave Job Deficit Unchanged*, 2012

¹⁵⁹ Report of Citizens for Tax Justice, April 4th 2012

¹⁶⁰ Survey from the US Bureau of Labor Statistics

¹⁶¹ Barbara Ehrenreich, *Nickel and Dimed: On (Not) Getting By in America* 2001; essay based on new afterword to the 2011 anniversary edition published by Picador Books is available on Barbara's online blog: *On Turning Poverty Into An American Crime*, 2011

¹⁶² Food and Water Watch, 2010 fact sheet, *Renew America's Water*

community, is not only a deeply flawed response to the US water system's need for renewal, but always and inherently sets up ethically objectionable forms of economic and social relations around water. A system of private ownership of monetary and resource wealth, the hoarding of significant quantities of these (or their withdrawal based on inability to pay, in a trade-based transaction) amid a world of endemic poverty and continual water need invites moral and political critique.

There is, perhaps, no better resource issue to examine than water, to reveal the nefarious nature of the capitalist mode of production, its inefficiency and incompatibility with the goal of realising the subsistence needs of all people.¹⁶³ One of the more hidden catastrophes alongside the decline of Detroit, Michigan¹⁶⁴, as a major automotive centre is now the number of people left without a residential water supply, due to poverty. Alongside those million in receipt of food stamps and the miles of foreclosed homes¹⁶⁵, there has been a growing army of Detroit residents reconnecting to the water supply illegally. If you cannot afford to pay your bill the service to your home is cut-off and this has happened to many throughout Detroit where right wing policy-makers pushed privatization through, by stressing the run-down state system.

It is in this context that the work of Michigan Welfare Rights Organization¹⁶⁶ (MWRO) needs to be lauded. Whilst Bolivia might be *forced* through structural adjustment to sell off its state services, reducing its ability to pay public employees, care for the sick, elderly and disabled, the U.S. had long abandoned any 'Great Society' plans in its minimalist state. The people who MWRO work with are the result; not only the victims of a privatized water service, they are the victims of an anti-Welfare state as a whole.

¹⁶³ Including citizens of the nations with the largest GDP on Earth.

¹⁶⁴ The name Michigan originates from the Indian or Native American word '*Michigama*' meaning great or large lake (Library of Michigan).

¹⁶⁵ I do not wish to give the impression that all is terrible in Detroit; as documentary 'Detroit Lives' shows, this is not the case.

¹⁶⁶ Michigan Welfare Rights Organisation Website

A fuller understanding could be gleaned by examining the issue from the perspective of critical race theory, utilising insights from new economic geography.¹⁶⁷ As of the 2010 estimate, although 14.2% of the population of Michigan as a whole are Black, they are overwhelmingly concentrated in the urban centre of Detroit with its 82.7% Black population.¹⁶⁸ Water cut-offs are disproportionately endured by low-income, Black and specifically African-American communities reflecting a pervasive structural racism and the racial determinism of poverty within US society and institutions, despite rectification of legal barriers to equality. A Detroit community has also been burdened by the effects of Marathon Oil Corp.'s tar sands refinery which, according to locals, is an industrial blight emitting arsenic, benzene and lead.¹⁶⁹ The geography, local impact and economy of this oil refinery further reinforce the connection between, what can seem, at first glance, disparate issues in this paper.

This is also demonstrated by the nexus that has developed between publicly traded water companies such as Aqua America, Inc. (in total operating in ten states) and the fracking lobby. Private water companies are now paying thousands of dollars each year to belong to the Marcellus Shale Coalition which is a members group of companies and organisations representing the interests of the natural gas industry. The two sectors are proposing and beginning implementation of plans for, not only private companies' supply of water to the frackers, which is already taking place, but about plans for private water companies to treat wastewater from the fracking industry. This has led to displacement, and as Food and Water Watch highlights, further indicts the privatization of water, as companies such as Aqua America put profits from shale gas development ahead of water protection and conservation.¹⁷⁰

As the poor are cut-off, the bottled water industry has been booming: After being rejected in Wisconsin, Nestle, who owns seventy brands of bottled water, including Ice Mountain, has

¹⁶⁷ This differs from the New Economic Geography (capitalised) of unorthodox economists like Paul Krugman who is in the minority, in insisting on the continuing relevance of geography to economic processes (Sokol, 2011)

¹⁶⁸ Department of Commerce Quick Facts census information.

¹⁶⁹ See Chapter 3 for tar sands analysis and see photo slideshow from Circle of Blue interview with Detroit residents near Marathon Oil Corp. tar sands oil refinery.

¹⁷⁰ Food and Water Watch, "*Fracking's Got a Friend in Pennsylvania,*" 2012

irreparably drained the water sources of counties in Michigan, damaging the Dead Stream at the headwaters of the Muskegon River. Nestle pumps water, repackages it in plastic bottles¹⁷¹ and sells it back to people, who might even live near to the watercourses it was originally taken from. Nestle pays absolutely nothing for the water from these sources but makes a substantial profit on it, it is speculated, about 1.8 million dollars a day. This corporate water grab, as it might be called, caught the attention of Big Rapids resident Terry Swier, who founded, and presides over Michigan Citizens for Water Conservation (MCWC)¹⁷². The citizens group organised to conserve Michigan's water as a public trust for the benefit of local people. The campaign led to legal battling against Nestle Corp. and environmental attorney, Jim Olson, represented the Michigan citizens.¹⁷³

Jim Olson's legal capabilities developed under the tutelage of Joseph L Sax, pioneer of the widely acclaimed article "*The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention*".¹⁷⁴ The judge in the MCWC v Nestle case initially ruled in favour of the Michigan citizens, implicitly reinforcing the 'new legal doctrine' articulated by Sax: that in many given instances private land is held, according to the authority of the state to see that it is used in the public interest. Nestle claimed they were a responsible 'corporate citizen' but local farming residents documented once flowing streams turned into mud flats. During the trial, which occurred in a season of drought, Nestle continued pumping. Most disturbing, at the outset, when residents requested a moratorium, township council officials reflected a condescending attitude of knowing what's 'best': Nestle had been informally given the green light by local authorities, without any citizen consultation, in a move prefiguring, what could, arguably, be described as the Court of Michigan's erosion of democracy.

¹⁷¹ Production of non-biodegradable, plastic bottles in the 'mineral water' industry creates problems as they end up as polluting watersheds or in landfill which is full of organic matter releasing yet more harmful methane. Use of plastic bottles reflects the interconnecting web of influence meshing the corporate and energy sectors. A large proportion of 'value-added' products that end up on supermarket shelves depend on plastic for their production/packaging; one of the ubiquitous hydrocarbon by-products of the oil industry, which could come to epitomise our era with *Homo sapiens* now *Homo plasticus*. Michigan ranks fourth in the USA for plastics shipments and number of employees in the plastics industry (Michigan Manufacturers Association)

¹⁷² Michigan Citizens for Water Conservation Website. The board is now engaged in research and citizen education on the effects of fracking.

¹⁷³ *Jim Olson, Defender of the Environment Wins Award*, Grand Rapids Legal News (online) 2010

¹⁷⁴ Particularly this and other articles have led to a growing body of

Nestle had a right to use the water sources, in a manner shared by all other landowners, but the case hinges upon whether a 'right to use' can equate to a right to drain in vast quantities, bottle and sell on for profit; a qualitatively and quantitatively different kind of 'use' than that exercised, in usufructory ways, by local residents. MCWC members, spearheaded by Olson and armed with knowledge of the public trust doctrine, researched the history of water ownership and concluded Nestle's immoral water grab also contravened the law; crucially persuading the court of this fact. However Nestle Corp. appealed the ruling and was granted a provisional right to pump until the outcome of the appeal, despite its inability to return any grabbed, sold water ex post facto should the corporation lose and its actions found to have been illegal all along.

It has been the purview of elected parliaments or congress, pursuant to constitutional guarantees, to balance the interests of citizens and business and to so regulate the latter (foreign, domestic or transnational corporations) that environmental abuses, for example, do not occur, or are penalized and the victims, remedied. These citizenship rights and democratic mandates are strengthened by an active civil society, bolstered by governments willing to check private power. They share historical preludes with international human rights principles and law, having features in common.¹⁷⁵ The decision of the appeals court in this case seems to signal a radical judicial departure from this vital state regulatory role, signifying an era of the complete, unveiled hegemony of 'trade liberalization' and capitalist interests: Michigan's citizens are living with the painful effects of a post-democratic regime.

In case there was any doubt, the USA supports its corporations to the detriment of other nation's citizens and *its own patriots*. We're familiar with China or 'competitive' states and their Export Processing Zones giving tax breaks to foreign capital, tolerating sweatshop labour conditions, trampling on the rights of children sewing clothes destined for the flag-flying shelves of Wal-mart.¹⁷⁶ We may be less predisposed to witnessing Michigan's Court make the 'least trade restrictive' decision in spite of the damage to water sources upon which current and future generations of Americans depend; opening up the state's watersheds, even potentially the Great Lakes, for sale and export. The Court employed the Necessity Test and

¹⁷⁵ Human rights adjudicatory bodies require the attempt to exhaust all domestic sources of justice.

¹⁷⁶ Greg Palast, "*The Best Democracy Money Can Buy*," 2003; 141-79

‘economic efficiency’ principle that reeks of NAFTA (North American Free Trade Agreement) and GATS (General Agreement on Trade in Services) and by so doing disregarded over a hundred years of binding legal precedent.

We are accustomed, but a growing number are opposed, to the reality whereby less powerful nations, many of them ex-colonies, are coerced by richer countries into accepting unfavourable regional trade agreements and the rules of the unelected, supranational WTO which render non-compliance with human rights obligations inevitable. It also aggressively assists (as we are aware with Bechtel and Bolivia) attempts to sue states for lost earnings. However this same governance system, utilising clandestine panel tribunals also undermines the hard-won rights and class struggle gains of Western electorates, foremost the U.S.A. proud in its rhetoric, of making the world safe for democracy. The MCWC v Nestle appeals’ ruling reflects a propensity to prioritise short-term financial gains of elites over more medium to long-term human water needs. Considering the increasing likelihood of widespread drought, the rate at which we are depleting non-renewable aquifers and the size of the U.S. “groundwater footprint”¹⁷⁷ this is especially dangerous.

Attitudes to water viewing it akin to a public trust have long been conceived by human beings around the globe. Its applicability in relation to the ‘gifts of nature’, chimes with the treatment of water as an ecological commons. The commons, existing precariously within a money economy and predicated on the idea of the gift, cooperative social relations and values like sharing and gratitude, is defended by Prof. Elinor Ostrom in her lifetime’s work for which she won the 2009 Nobel Prize in Economic Sciences.¹⁷⁸ It is imperative that we restore to or begin in earnest, to task governments, if we are to have them,¹⁷⁹ with the primary function of protecting the commons.¹⁸⁰ Political movements to reassert the commons, and

¹⁷⁷ Sandra Postel, “*Our Oversized Groundwater Footprint*,” National Geographic 2012

¹⁷⁸ A surprisingly endearing obituary of the late Elinor Ostrom appeared in the Economist, June 30th 2012; 98

¹⁷⁹ Henry David Thoreau modified an existing aphorism in Resistance to Civil Government to alter its meaning from “that government is best which governs the least” to “that government is best which governs not at all”.

¹⁸⁰ See commons defender, author, thinker and gift economy advocate Charles Eisenstein in an interview for the Guardian.

augment the power of those who benefit from their careful husbandry, (ultimately everyone) could, perhaps, benefit from “glocalisation”.

It is not easy, quick or simple to formulate or enact radical answers, policy recommendations and changes in governance, which are not mere palliatives and plasters over systemic wounds. In light of the challenges, the glocal is what we need, said Nawal el Saadawi¹⁸¹, addressing on her 80th birthday, a gathering crowd on the steps of St Paul’s, thousands of miles from the water campaigns of Michigan, but the site of the Occupy LSX/London protests, just one of many in an internationalist movement. Locally focused community and grassroots generated protests, projects and discussions about what is to be done in the face of all kinds of inequities (such as of water access) linked up to, and constituting, a global network of resistance is required, counselled Dr. Saadawi, using an amalgam of the words global and local.

¹⁸¹ Egyptian revolutionary, feminist, physician and psychiatrist

Conclusion

Threats to the human right to water are symptomatic of an increasingly obvious trend: TNECs alongside private water companies are enlarging their political power and share of all global economic processes appropriating greater control of the global water supply. They are thus empowered to pollute and strip the earth of its resources and exploit a captive and thirsty market. The rights of human beings are sacrificed because they are viewed as expendable; history teaches that the ruling class, with its drive to accumulate more short-term liquidity and assets, blinkered to environmental and social effects, do not yield up any gains without sustained, organized resistance. The trend is aided politically by a widespread slavish allegiance to the current model of economic orthodoxy necessitating the impossible; infinite compound growth on a finite planet. As David Harvey reasons,

“Compound growth for ever is not possible and the troubles that have beset the world these last thirty years signal that a limit is looming to continuous capital accumulation that cannot be transcended except by creating fictions that cannot last. Add to this the facts that so many people in the world live in conditions of abject poverty, that environmental degradations are spiralling out of control, that human dignities are everywhere being offended even as the rich are piling up more and more wealth...”¹⁸²

The IUCN (International Union for Conservation of Nature and Natural Resources) paper (2004), which ruminated on the usefulness of a human right to water in lobbying for more equitable water access in practise, asserted that the water crisis is “essentially a crisis of governance”.¹⁸³ However I have presented a case that it is a crisis of the lack, more specifically, of directly democratic governance and cannot but conclude that it is perpetuated by supranational, unelected bodies such as the World Bank and WTO. These organisations aggressively yield up power to the very private actors generating the crisis of greed which only exacerbates the effects of water scarcity and climate change emanating from the natural boundaries of our closed water system. Its visible consequences, of class war and competition

¹⁸² David Harvey, “*Organizing for the Anti-Capitalist Resistance*,” Talk given to World Social Forum 2010 (online transcript)

¹⁸³ John Scanlon *et al.* “Water as a Human Right?” IUCN Environmental Policy and Law Paper No. 51, 2004

over resources, suffice to instruct us that, in Erich Fromm's words, "*Greed and peace preclude each other* (emphasis in original)".¹⁸⁴

Perhaps, in conclusion, we need to learn or remember how to relate to water, energy sources and the earth in the ways indigenous peoples have done through parts of history and prehistory, with respect and reciprocal relationship. The last words seem best left to Tiokasin Ghosthorse who believes the language of music is key to inter-cultural understanding and cultural survival; and that pressingly, we have a moral responsibility to live *with* Mother Earth, as human beings, and not *on* Mother Earth, as parasites" (emphasis added).¹⁸⁵ His central message is that "All of us are indigenous to Mother Earth; it's just that we've forgotten how to be indigenous".¹⁸⁶

¹⁸⁴ Fromm, Erich. "*To Have or To Be?*" 1974;16

¹⁸⁵ Isabelle de Grave, "*We Are All Indigenous to Mother Earth, But We Have Forgotten,*" August 10th 2012, Inter Press Service News Agency (Note: this is a quote of the interviewer paraphrasing the message of Tiokasin Ghosthorse.)

¹⁸⁶ Ibid.

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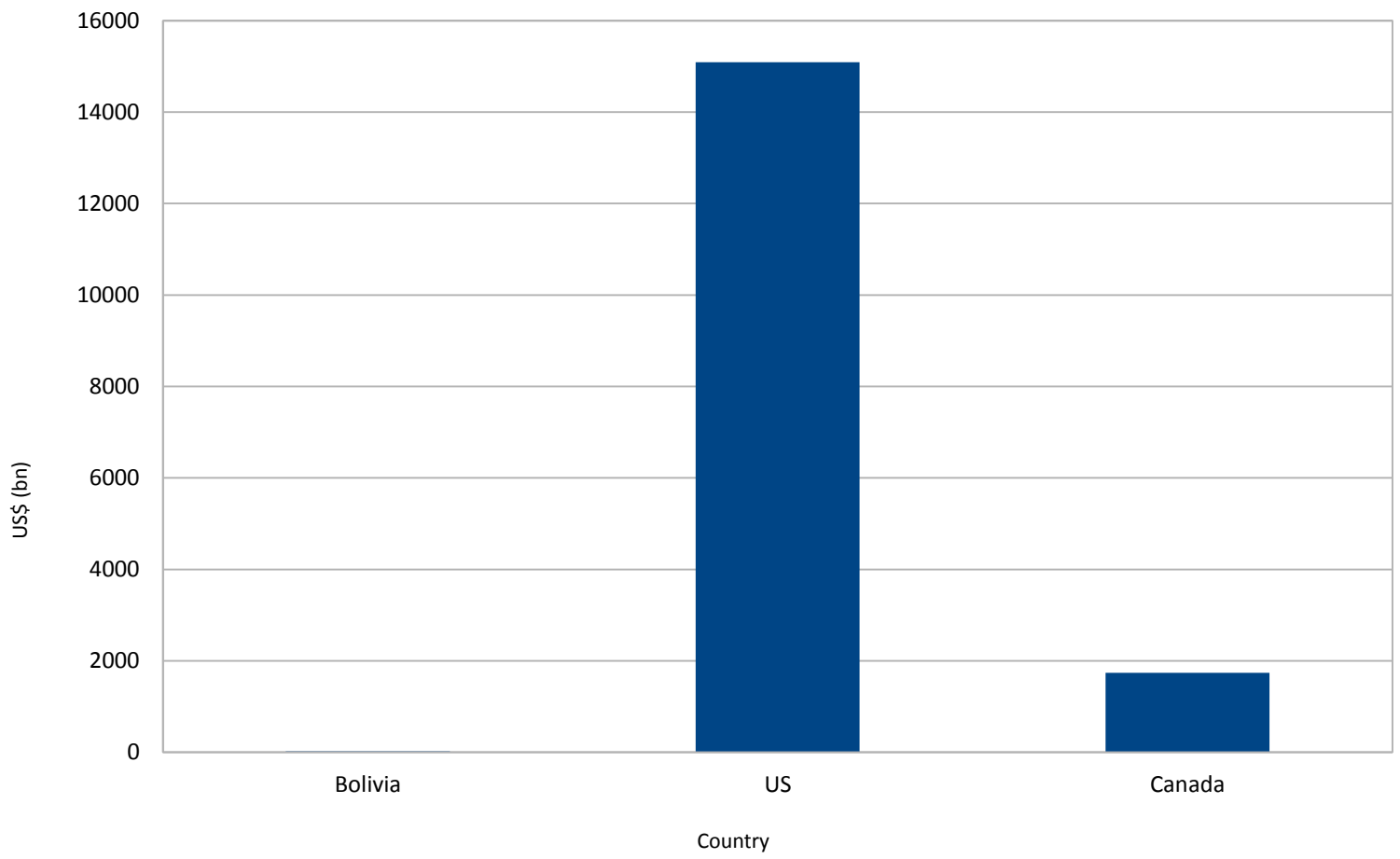
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Comparison of 2011 GDP



Comparison of 2011 GDP per capita

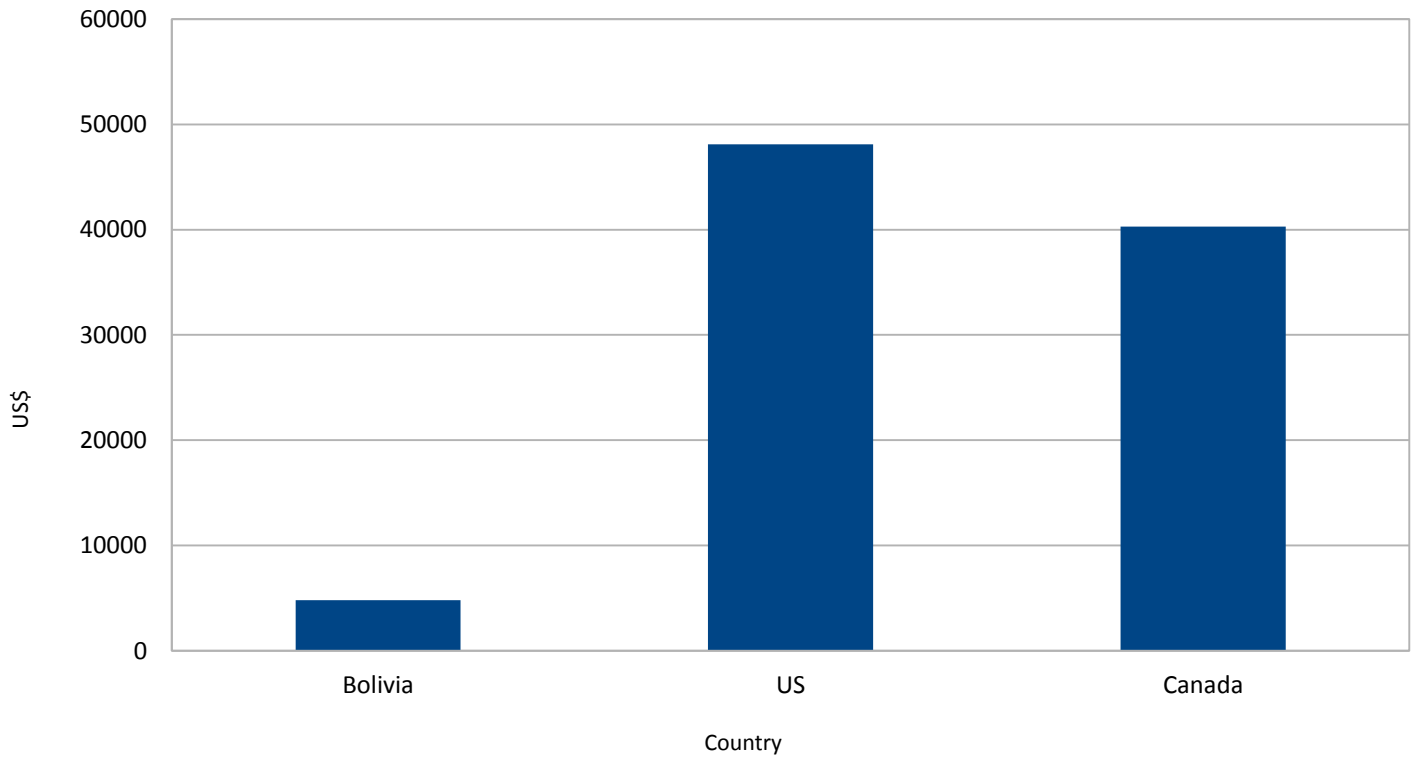


Fig. 1.3 Venn Diagram

