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ASIA PACIFIC DISPUTE RESOLUTION

Policy-oriented Macro-analysis: China´s Freshwater & Health Crisis an Essay on the Techno-industrial Puppetry of Oligarchic Dictatorship

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APDR Working Paper Series

Volume 3 Number 1

ISSN 2371-6304

POLICY-ORIENTED MACRO-ANALYSIS: CHINA'S FRESHWATER & HEALTH CRISIS: AN ESSAY ON THE TECHNO-INDUSTRIAL PUPPETRY OF OLIGARCHIC DICTATORSHIP

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Introduction

Since the economic reform led by Deng Xiaoping in 1978, China has achieved economic liberalization unparalleled to other developing countries (Boisot and Child, 1996). The grotesque techno-industrial processes involved in globalized oligarchic dictatorship have escalated, increased, and intensified the destruction of China's biotic environment. Acute levels of pollution resulting from unrestrained resource extraction and neoliberal market-based trading mechanism are not only threatening the health of the Chinese population but also impacting the biosphere on a global scale. As an environmental activist, filmmaker, artist and scholar, it is with spiritual and ethical awareness, a profound compassion for the suffering of other beings, a deep sensitivity for the beauty of the natural world, as well as a real concern for planetary survival that I engage in this research. This essay intends to demonstrate the severity of China's environmental pollution, with a specific focus on water. This essay should be read as a prolegomenon to my University of British Columbia (UBC) Master of Arts in Asia Pacific Policy Studies (MAAPPS) graduate thesis. My thesis includes analytical reflections on the process of producing *Dragon Tears,* a feature documentary film I directed on environmental law and policy in China in the context of climate change. The film's preview can be viewed on my interdisciplinary art website under *Dragon Tears,* available at www.neidrya.com.

During the fall semester of 2015, I was appointed as a Research Assistant under the supervision of Dr. Pitman B. Potter. My work consisted of gathering research material on the topics of human rights, environmental policy and law, including interviews with officials and policy experts for the Asia Pacific Dispute Resolution (APDR), Major Collaborative Research Initiatives (MCRI) program supported by the Social Sciences and Humanities Research Council (SSHRC) of Canada. Dr. Wang Xi, Director of the Environmental and Resources Law Institute (ERLI) at Jiao Tong University in Shanghai, was my host supervisor in China. The premise of my research was that China's ecological collapse, as it inscribes itself in the larger context of the planetary human ecological crisis, is one of the most urgent challenges facing contemporary society. China's ecological overshoot is a systemic crisis of planetary emergency, as toxic pollution is oozing beyond China's borders. The pollution crisis must be understood in the context of China's socialist democratic authoritarian polity and how it relates to transnational trade, global governance, and the role of the World Trade Organization.

Dragon Mythos

One of the earliest depictions of the dragon was found on a plate in Taoist southern Shanxi, carbon dated to 2500-1900 BCE, during China's earliest dynasty, the Xia dynasty (Lindqvist, 2008). In Taoist Chinese ecological lore, the dragon is a shamanic symbol associated with the Great Water Goddess and sacred life-giving element of water. The dragon is also symbol of fertility, midst, dew, rivers and rain.

Water cults' primeval matriarchs performed ancient ceremonies (Schafer 1951, p. 132) celebrating river water deities (Schafer 1973, p. 60). From c. 1750 to 500 BCE, shamanism was the dominant spiritual force in China (Palmer, 1996). Additionally, in ancient Chinese mythological lore, the dragon motif embodies transformation, yin, as well as a spell invoking water deities. The dragon is also associated with imperial power; China's first emperors were believed to be decedents of the celestial dragon-spirit.

> "The dragon was not just another mythical animal. It was regarded as the most sacred of all creatures and symbolized China and the power of the emperor. The Yellow Emperor, who, according to legend, ruled the land along the Yellow River, the cradle of China around 2700 B.C., and is considered to be the father of all China, was said to have been the incarnation of the dragon." (Lindqvist 2008, 115).

In the chapter "Women, Nymphs and Dragons," from *The Divine Woman, Dragon Ladies and Rains Maidens*, a book written in the early 1970s by Dr. Edward H. Schafer, professor at the University of Berkeley and Harvard graduate, we learn about the magical legend surrounding China's first emperor.

> "This lucky-unlucky woman had been embraced by the same kind of being that had embraced many Chinese queens to make them mother of kings. Such dragon lovers were themselves kings, by virtue of their power over rain and fertility, like the ancient rulers of the Middle Kingdom." (Schafer 1973, 23).

The Classic of Mountains and Seas is considered one of the most important classic Chinese literary works, and it is referred to as "the *locus classicus* for many myths" (Anonymous (trans. Birrell) 1999, xix). In Book One, "the deities of these mountains all have the appearance of a bird's body and a dragon's head" (Anonymous (trans. Birrell) 1999, 5). The dragon permeates the cosmology of ancient China and is still deeply rooted in the spiritual imagination of the Chinese social fabric today.

In Tang poetry, "some 'dragon kings' daughters visualized in this genre resemble the court belles of Europe imagined in polished literature as Greek nymphs and naiads" (Schafer 1973, 90). The dragon is associated with the female shaman, called shamanka, or the Wu Shan goddess (Schafer 1973). Although she was mostly ignored by Tang poets, Nü Kua was the most important dragon in ancient China and referred to as the "old rain dragon goddess" (Schafer 1973, 61; 92).

"Nü Kua's gauzy skirt, a hundred feet long,
Suspended over the Hsiang and Kiang, gives its color to the hills."

The universe is composed of opposing forces. Yin and Yang in Chinese spiritual cosmology symbolize the universe. "Yin and Yang represent linked opposites, or antagonistic factors. Such dualities as male/female, water/fire, and night/day are antagonistic pairs, but the parts of the pairs cannot exist without their opposites" (Ede 2006, 21). The symbolic union of the dragon and phoenix, symbolize the elemental opposite forces of water and fire, as well as a mythic-cultural representation of the marriage of the emperor and empress (Ede, 2006). Mythology is a tool for social cohesion (Rees, 2002) and shapes the spiritual patterns for cultural identity and daily life.

China's Early Societies

The cultivation and overexploitation of farmland in fact began in China's earliest societies: the Xia (2000-1554 BC); the Shang (1766-1045 BCE); and the Zhou (1045 BC- 256 BCE) dynasties (Lee, Crawford, Liu, and Chen, 2006). In "Chinese Religion in the Shang Dynasty", Howard D. Smith describes China's Neolithic ancestors as indigenous communities living in mountain villages, cultivating the soil, hunting, fishing and making pottery in a sophisticated civilization around the banks of the Yellow River (Smith 1961, 143).

> "The primary Neolithic crops, domesticated by the 5th millennium BC, were drought-resistant millet (usually *Setaria italica*), grown on the eolian and alluvial loess soils of the northwest and the north, and glutenous rice (*Oryza sativa*), grown in the wetlands of the southeast. These staples were supplemented by a variety of fruits, nuts, legumes, vegetables, and aquatic plants. The main sources of protein were pigs, dogs, fish, and shellfish. By the Bronze Age, millet, rice, soybeans, tea, mulberries, hemp, and lacquer had become characteristic Chinese crops. That most, if not all of these plants, were native to China indicates the degree to which Neolithic culture developed indigenously." (Encyclopædia Britannica, 2014).

The concept of Mandate of Heaven and "using natural disasters, particularly waterborne ones, as a standard against which to measure a ruler's effectiveness" (Mertha 2008, 1) justified the Zhou conquest over the Shang dynasty, as well as the succeeding dynasties. The people from the Shang and Zhou dynasties are referred to as proto-Chinese, ancestors of the Han people, because they developed and used Chinese characters in a highly ritualized manner. Chinese ideograms originated as pictographs. During the Shang dynasty, Chinese pictographs were drawn on oracle bones, among which were ox scapulae and turtle plastrons. *Shui (*水) is the simplified contemporary character for water. This modern character has evolved from earlier forms of pictographs symbolizing the movements of the river or waves. To trace back a character's etymology is a fascinating and rich historic-conceptual journey. Chinese is one of the most extraordinary written languages on earth because of its ontological dimension.

Environmental Historical Overview

As the proto-Han appropriated territory, 'Chinese-style settlements' required the metamorphosis of nature, deforestation, and hydraulic systems (Elvin, 2006). Periods of wars, construction projects, and population growth caused soil erosion, flooding, and desertification. "In the warring states alone there were 590 recorded wars" (Economy, 2004). During the Spring and Autumn period (770-476 BC), the Qi State Prime Minister, Guan Zhong, had a deep understanding of the importance of water authority and "convinced the leaders of other principalities never to 'execute water works detrimental to the interests of the other states and never to impose a grain embargo in time of famine'" (Economy, 2004).

Environmental degradation intensified during China's imperial period. In response to land deterioration in the mid-seventeenth century, the Qing dynasty (1644–1912 CE) began establishing regulations for ecological protection. The prevailing challenges of increased population, unsustainable management of forests, waters and farming methods, as well as the overexploitation of fisheries, engendered water scarcity. The 1911 revolution marked the end of imperialism in China. Ecological destruction increased to catastrophic levels during the 20th century. By the 1930s, China's death rate reached topmost in the world (Economy, 2004).

In the 1954 first Constitution of the People's Republic of China (PRC), Article 6, we learn that the pre-Cultural Revolution Communist Constitution was designed as a foundational document for the political transition towards a socialist democratic dictatorship. "Environmental law in China predates the Cultural Revolution. Even while engaged in national consolidation and warfare in Korea, the so-called New China designated the natural environment as belonging to the public in its initial Constitution (1954)" (Alford and Shen, 1997).

Article 6

The state sector of the economy is a socialist sector, owned by the people. It is the leading force in the national economy and the material basis on which the state carries out socialist transformation. The state ensures priority for the development of the state sector of the economy. All mineral resources and waters, as well as forests, undeveloped land and other resources, which the state owns by law, are property of the people.

Changes were made to the declaration in the early 1960s, adding new environmental laws and regulations to the existing declaration. "The early history of the PRC's efforts in environmental law are discussed in Qu Geping, Environmental Management in China (1991)" (Alford and Shen, 1997). Mao Zedong's political repression, iron and steel campaign during the Cultural Revolution (1966-1977) caused not only widespread famine, but also environmental damages. Mao Zedong "informed by military logic" (Shapiro, 2001) ensured population growth, thus further contributing to environmental destruction.

In 1972, the United Nation (UN) organized the UN Conference on the Human Environment (UNCHE), in Stockholm, Sweden. UNCHE was the first international conference on the environment. The momentum of the UNCHE had tremendous impact on the Chinese participants. The following year China hosted its first national conference on environmental protection. After the end of the Cultural Revolution in 1979, the PRC established the Environmental Protection Law Trial Implementation, a regulatory framework for the protection of the environment. That same year, the National People's Congress endorsed the preliminary draft of the People's Republic of China Environmental Protection Law (EPL). "Today's environmental regulation is rooted in provisions of the 1982 Constitution declaring that the 'state protects . . . the environment . . . [and] prevents and controls pollution and other public hazards.'" (Alford and Shen 1997, 131).

Death of Nature

China's long history is also defined by other civilizations, which developed independently, and often in close contact with those of China (Loewe and Shaughnessy, 1999). The Chinese belief in the intricacy of being, an underlying motif in Chinese ontology, has far-reaching implications in Chinese culture, philosophy, religion, epistemology, aesthetics, and ethics (Tu, 1989). It is this ancient wisdom which connects contemporary Naxi Dongba to the early Chinese civilization. Indigenous ecological cosmology continues to exist as a central part of religious mythic-ritual narratives for Chinese ethnic minority groups in contemporary China.

The Naxi Dongba are a Chinese ethnic minority group with a population of approximately 300,000 people living indigenously in remote mountain villages in southwestern China, in Yunnan and Sichuan. They are the last people on Earth to use pictographs. The pictographic scripts are mnemonic aides

employed in rituals celebrating the sacred relationship between humans and nature. "These priests of the Bön religion, a kind of shamanism that long ago spread to Naxi from pre-Buddhist Tibet, chant ancient legends and ceremonies using the pictographic texts as memory aids" (Ramsey, 1941). The Naxi Dongba rituals celebrate the interconnections between humans and nature, the loss of which is documented, among others, by Carolyn Merchant in The Death of Nature. "Environmentalists are trying to develop an ecological ethic emphasizing the interconnectedness between people and nature" (Merchant, 1989) and they "have suggested an image of stewardship in which we are not owners of nature but rather its temporary caretakers" (Ackerman and Heinzerling, 2004).

During the summer of 2012, I travelled to Yunnan province, southwestern China to visit Naxi Dongba villages to document contemporary Chinese indigenous living cultures. Through the support provided by Lidejing the Director of the Naxi Dongba Research Institute located in the old city of Lijiang, I was the first Canadian to be invited to the Naxi Dongba village of Wuxi. I was told that one American had visited the village before me. Wuxi is a mountain village near the White-Water Terraces in Shangri-La County, with a total population approximating 400 people. They were extremely gentle, generous, and kind with me. I was invited by Dongba priests to document both a Dongba script class and a traditional dance ritual. The Naxi people are completely self-sufficient, apart from a few modern objects like cell phones, computers, kitchen utensils, and trucks.

That summer I had the unique opportunity to visit one of the most remote valleys in China. The Drung Valley is located at the foothills of the Himalaya mountains in northwestern Yunnan on the border of Myanmar. In 1998, a road was built to access the valley. My guide explained that since 2009 about 50 foreigners a year had visited his village, for a total of approximately 200 people at the time I was there. Drung women, born before 1949, had their entire faces tattooed. This was done in order to avoid women being stolen by nearby tribes. This face tattooing practice was banned by Mao Zedong in 1949. There were 18 of these women alive when I visited the village in 2012. The Drung tribe has a total population of about 6,000 individuals. They are one of the less numerous Chinese minorities, and until now, one of the few minorities that were allowed to have three children. Tattooed women are now referred as National Treasures by the Chinese government. They truly are.

China's Legislative Body

By the 1990s, academic and political attitudes towards private property had undergone a fundamental change. Certainly, classical or neoclassical liberal conception of the market were *en vogue* when the drafting process for the Property Rights Law (PRL) began in 1993, and still dominated academic thinking at the time of its eventual enactment in 2007 (Pils, 2009).

On March 16th, 2007, after over a decade of deliberation, the PRC's Property Rights Law was consolidated (Marechal, Tekin and Guliyeva, 2008), making important changes in ownership and property rights laws in existence since the 1980's in China. More importantly, in the last few decades, the ideological transition towards a neoliberal private property regime appears as a political shift mirroring fundamental changes from Maoist-Marxist Communist ideology of the Communist Party regimes' earlier stages. This neoliberal trend is seemingly contradictory to the socialist collective land ownership system. These ideological transformations are paralleled with the integration of positive law and major developments in China's legal system. Investing in the judiciary is as important as political reform for China's environmental rehabilitation.

> "The PRC has promulgated an increasingly comprehensive array of laws intended to speak to environmental concerns, but those laws suffer from the doctrinal infirmities and difficulties of enforcement that characterize contemporary Chinese law more generally." (Alford and Shen 1997, 126).

The Constitution of the People's Republic of China

The Constitution of the People's Republic of China was amended on March 14, 2004:

> "Article 1 - The People's Republic of China is a socialist state under the people's democratic dictatorship led by the working class and based on the alliance of workers and peasants. The socialist system is the basic system of the People's Republic of China. Disruption of the socialist system by any organization or individual is prohibited.
>
> Article 2 - All power in the People's Republic of China belongs to the people.
>
> The National People's Congress and the local people's congresses at various levels are the organs through which the people exercise state power.
>
> …
>
> Article 9 - All mineral resources, waters, forests, mountains, grasslands, unclaimed land, beaches and other natural resources are owned by the State, that is, by the whole people, with the exception of the forests, mountains, grasslands, unclaimed land and beaches that are owned by collectives as prescribed by law.
>
> The State ensures the rational use of natural resources and protects rare animals and plants. Appropriation or damaging of natural resources by any organization or individual by whatever means is prohibited.
>
> …
>
> Article 12 - Socialist public property is inviolable. The State protects socialist public property. Appropriation or damaging of State or collective property by any organization or individual by whatever means is prohibited.
>
> Article 13 - Citizens' lawful private property is inviolable. The State, in accordance with the law, protects the rights of citizens to private property and to its inheritance. The State may, in the public interest and in accordance with the law, expropriate or requisition private property for its use and shall make compensation for the private property expropriated or requisitioned. (Constitution of the Peoples Republic of China (January 2012) - Retrieved December 2014)."

Eva Pils points out in her remarkable article "Chinese Property Law as an Image of PRC History," that the 2007 PRC Property Rights Law has largely consolidated State power at the expense of Chinese citizens' property rights (Pils, 2009). The judiciary system protects government requisitions, prioritizes modernization, and urbanization over citizens' legal rights by giving pre-eminence to an emerging private ownership regime. The weak legal system has left numerous peasants destitute (Pils, 2009).

China's legal regime continues to be foremost "heavily instrumentalist - a tool of Party and state policy" (Potter, 2013).

Neither the Constitution nor the environmental law doctrine developed over the past few decades has been sufficient in protecting China's environment from extreme levels of pollution. The lack of rigorous and systematic enforcement of environmental laws is an issue that has to be understood in direct relationship to the PRC's history and political culture.

> "Consider, for example, China's most important environmental authority, SEPA, in Beijing. SEPA has become a wellspring of China's most innovative environmental policies: it has promoted an environmental impact assessment law; a law requiring local officials to release information about environmental disasters, pollution statistics, and the names of known polluters to the public; an experiment to calculate the costs of environmental degradation and pollution to the country's GDP; and an all-out effort to halt over 100 large-scale infrastructure projects that had proceeded without proper environmental impact assessments." (Economy 2007, 51).

Body Politics

The legislation Prevention and Control of Water Pollution of the People's Republic of China was adopted on May 11, 1984, and amended on May 15, 1996. This law protects bodies of water from over-exploitation, pollution, and encourages the sustainable management of water resources and prevention of water-born diseases. On April 24, 2014, at the 8th Meeting of the Standing Committee of the Twelfth National People's Congress, the Environmental Protection Law of the People's Republic of China was amended. Article 4 of the Environmental Protection Law declares that China's environmental protection is a national policy.

> "In the end, protecting China's beleaguered environment will require the government to reach beyond its comfort zone and confront the limits of its economic and political model. It will require the courage of the central leadership to face down vested interests in the state and industry that oppose the creation of impartial administrative and judicial institutions to regulate pollution. It will also require the good sense to allow society the genuine freedom to act as environmental watchdog without fear of repercussion." (Rooij and Wang, 2014).

China's water pollution crisis is one of the most severe environmental disasters in the world as well as the country's most complex policy challenge. China's pollution crisis is intricately intertwined to the unsustainable nature of the globalized market economy. Extreme water pollution emerges from the interplay of the PRC State apparatus power structure, weak judiciary, corruption epidemic, colliding with neoliberal market extremism rooted in oligarchic fundamentalism. The Communist Party of China (CPC) refers to itself as a democratic dictatorship governing a socialist state. China's political architecture operates from a decentralized power structure. This is largely caused by the country's vast territory; therefore, it is impossible to control such an immense territory from the political centre of Beijing.

The PRC Party/State centralized versus decentralized/localized governance determines the political dynamics nationwide, at the provincial and local levels. China's Communist Party/State authoritative decentralized power structure, as a method of governance and overall political control, facilitates local self-governance and provincial independence. This political architecture in conjunction with the lack of

independence of the country's judiciary and because of corruption, political, economic, or professional interests, have enabled catastrophic levels of environmental destruction. The CPC's second five-year Anti-Corruption Plan (2013-2017) recognizes China's rampant corruption as a potential threat to the CPC legitimacy. Corruption related prosecutions have intensified. Institutional corruption has a direct influence on local politics as well as on the environment. Laws will have to be applied rigorously across the nation in order to protect the natural environment.

More recently, the PRC central authoritative socialism under the people's democratic dictatorship political system has been allowing a pluralistic climate beneficial to change. Until recently, the courts have been mostly unwilling to protect civilians in environment related legal disputes. The development of ecological courts and public litigation in China are slowly becoming part of civil mediation. Environmental Non-Governmental Organizations (ENGOs) and International Non-Governmental Organizations (INGOs) have also had the ability to share sensitive scientific data about water and air pollution in China. Although media has been given more independence to cover environmental issues, there remains a tight control over the circulation of information. On February 28, 2015, Chinese journalist Chai Jing's film *Under the Dome* was released. Less than 48 hours later, the film had been viewed 100 million times (Hatton, 2015). The documentary film was available on the internet for one week before it was censored. This is an example of the information control the CPC is engaged in, which is done for the purpose of protecting the party's political power. China operates the largest internal information control security system in the world; information control is a political strategy.

Political Ecology

"The environmental problem is no doubt one of the most critical problems facing our generation. One hundred and thirty-seven species are wiped out every day and one and a half acres of rain forest are felled every second." (Grinlinton and Taylor 2011, *Foreword*). In his 2013 interview with Al Jazeera, *The Responsibility of Privilege,* world-renowned linguist and political dissident Noam Chomsky discussed the risks associated with the global ecological crisis and possible collapse of the financial system:

> "There is another externality that's much more severe: the destruction of the species. And that's not a joke. It's imminent that global warming will cause major catastrophe. You can argue about the details, but there is not much doubt that it's coming." (Al Jazeera, 2013)

The United Nations' leading scientific environmental panel, the Intergovernmental Panel on Climate Change (IPCC), released a scientific report warning about the "severe, irreversible, and dangerous impacts of climate change" (IPCC, 2014). In order for humanity to avoid climate collapse by the end of this century, global greenhouse gas emissions will have to be radically reduced within the next fifteen years (IPCC, 2014; Democracy Now, 2014; Berman, 2013). The earth's biosphere has evolved over the last 3.8 billion years and has crystallized into intricate biotic designs, which have an intrinsic ecological value from an ethics, environmental, and spiritual viewpoint. Nature is sacred. We are a part of nature and the sacred intricately interweaved web of life.

China's pollution crisis has now gained international attention. The Netherlands Environment Assessment Agency Trends in Global CO2 Emissions Report 2013 states that China surpassed the United States as the world's leading producer of greenhouse gas (GHG) emissions. China's energy consumption is the greatest globally, and energy demand is on the rise. The burning of coal provides near 70 percent of China's energy. Coal has powered China's unparalleled economic growth at the expense of

environmental conditions and the health of the Chinese population. China emits 40 percent of global GHG emissions, mainly due to its heavy reliance on coal. China's coal-burning is responsible for half of the world's annual coal consumption. Coal will have to be completely replaced by renewable energy by 2050 in order to keep global warming under 2 degrees Celsius. On a planetary scale, GHG emissions will have to be reduced between 40-70 percent by 2050 in order to avoid an increase of global temperature of over 2 degrees Celsius and to avoid climate collapse by the end of this century.

> "Consumption in China is huge partly because it is inefficient: as one Chinese official told *Der Spiegel* in early 2006, 'To produce goods worth $10,000 we need seven times the resources used by Japan, almost six times the resources used by the U.S. and—a particular source of embarrassment—almost three times the resources used by India.'" (Economy, 2007).

This lack of efficiency is extremely problematic considering the dangerous levels of toxic air particulates and water scarcity. Neoliberalism and China's rapid economic growth have enabled the normalization of localized deaths. Every human being, as well as every other non-human living creature, has the right to fresh water, fresh air, and a healthy environment. This deplorable condition of human rights abuse reminds me of the profoundly disturbing article by contemporary investigative anthropologist Nancy Scheper-Hughes "Parts Unknown: Undercover Ethnography of the Organs-Trafficking Underworld."

> "In Agamben's book, the postmodern condition is the final flowering of the perverse biologic of the mid-20th century death camps, where human life is redefined in terms of the audacious claims and rapacious desires of one population of super-citizens on the bodies and vitality of an(other) population of stripped down non-citizens, those whose naked or 'bare lives' can be taken, dismantled and sacrificed at will." (Scheper-Hughes, 2004).

To interpret this distinct pattern of decadent inequality, racism, human rights abuses, and murder for profit, the above trends have been accurately termed by anthropologist Nancy Scheper-Hughes as *neo-cannibalism*. Organs are stolen, bought, transported from poor countries and impoverished cities to rich ones, and transplanted from the *negro* body, the black body, to the white ones.

> "But with all due respect for the changing face of late modern capitalism, the human organs markets still conform to an earlier model of mercantile global capitalism, one that bears some resemblance to the Atlantic slave trade. Like the slave routes of old, the traffic in human organs requires 'donor', 'recipient' and 'transfer' nations. The 'global cities' (cf. Sassen, 1991) that provide the 'raw materials'—human kidneys, livers, corneas, skin, tendons, heart valves and other body parts—are Bucharest, Chennai, Chisenau, Johannesburg, Lvov, Lima, Manila and Moscow, while the 'global cities' that are the recipients of these body parts are Berlin, London, New York City, Philadelphia, Tel Aviv, Tokyo, and Vancouver." (Scheper-Hughes, 2004).

Why are people becoming ill and dying to support a Western lifestyle based on unsustainable consumption patterns? It's a question those participating in the Western lifestyle must reflect on to fully understand the implications of this way of life at this time in the history of Earth and humanity.

The 2005 United Nations' Millennium Ecosystem Assessment Report established that the impacts of human activity on the planet's biosphere to sustain future generations can no longer be taken for granted (Grinlinton and Taylor 2011, 9). The IPCC 2014 report urges the strategic planning and implementation of

global warming adaptation measures. The Nobel Peace Prize winner IPCC Chair, Rajendra Pachauri's public statement of the report, states the profound implication for the world:

> "And let me repeat once again, we have said very categorically in this report, the implications for human security. We have reasons to believe that if the world doesn't do anything about mitigating the emissions of greenhouse gases and the extent of climate change continues to increase, then the very social stability of human systems could be at stake." (Democracy Now, 2014).

The water crisis in China must be understood in the context of global liberalized trade, rising sea levels (Merchant, 2009), climate change, ecological overshoot, and the possibility of climate collapse as early as by the end of this century. Sir Martin Rees, the Astronomer Royal, in his book "Our Final Century?: Will the Human Race Survive the Twenty-first Century?" cautions that humanity has only a 50/50 chance of surviving this century due to nuclear armament and environmental destruction (Walker, 2003). Dr. William E. Rees, UBC Professor Emeritus and former Director of the School of Community and Regional Planning, explains that techno-industrial society is unsustainable from a biophysical perspective (Rees, 2006). To fully grasp Dr. William Rees' statement is not an easy task; it requires courage and an open mind.

> "The fact is that all major national governments and most mainstream international agencies remain fixated on a mythic vision of global development and poverty alleviation centred on unlimited economic expansion and fuelled by economic integration, open markets and more liberalized trade. Indeed, 'sustainability' has been subsumed under this wider agenda via the glib assumption that through the machinations of the marketplace, increased factor productivity and the efficiency gains of trade will be sufficient means to achieve sustainability's end." (Rees 2006, 222).

Health in China

For decades, the Chinese leadership prioritized economic development over environmental sustainability (Potter, 2013). "The maxim 'First development, then environment' was a common refrain throughout the 1980s and much of the 1990s" (Economy 2004, 18). Cancer villages are mushrooming across China. Chinese people are dying. Neoliberal market fundamentalism ideology involves deadly mechanisms. These ideological mechanisms fuel the techno-industrial puppetry of oligarchic political culture. Elizabeth C. Economy, C.V. Starr Fellow and Director of Asia Studies at the Council on Foreign Relations and the author of *The River Runs Black: The Environmental Challenges to China's Future* synthesizes China's environmental collapse in *Foreign Affairs* "The Great Leap Backward":

> "China's environmental problems are mounting. Water pollution and water scarcity are burdening the economy, rising levels of air pollution are endangering the health of millions of Chinese, and much of the country's land is rapidly turning into desert. China has become a world leader in air and water pollution and land degradation and a top contributor to some of the world's most vexing global environmental problems, such as illegal timber trade, marine pollution, and climate change. As China's pollution woes increase, so, do the risks to its economy, public health, social stability, and international reputation. As Pan Yue, a vice minister of China's State Environmental Protection Administration (SEPA), warned in 2005, 'The [economic] miracle will end soon because the environment can no longer keep pace.'" (Economy, 2007).

Coal-burning provides 70 percent of China's total energy. Minuscule airborne toxic particulates called Particulate Matter (PM 2.5- fine particles) are a by-product of the burning of coal. These air particulates enter the bloodstream through the lungs (VICE, 2015), engendering serious health hazards, particularly respiratory problems. A total of 50 percent of the country's air particulates emissions come from coal. Professor Michael Brauer at the University of British Columbia's School of Population and Public Health alerts the public to air pollution in a recent media release stating that it is "by far the leading environmental risk factor for disease" (UBC Media Release, 2016). As air pollution reaches deadly extremes in China, Vitality Air, a Canadian company based in Alberta, is bottling Canadian Rocky Mountain fresh air for the Asian markets. This is obviously neither a desirable, nor sustainable solution. Furthermore, coal-burning contributes heavily to global warming.

"China is the factory of the world" said Dr. Vandana Shiva in an interview in Paris during the 2015 Paris Climate Conference, also known as COP21, for *Dragon Tears* in December 2015. China's energy consumption, including growing domestic energy demand, energy for industry and exports, will have major consequences on the future of the world. This is really the key point of this work. In this article "Choking on China: The Superpower that is Choking the World" written by Thomas N. Thompson, and published in *Foreign Affairs*, the journalist surveys the repercussions of China's environmental collapse and its effect on the rest of the planet. "The dangers of China's environmental degradation go well beyond the country's borders, as pollution threatens global health more than ever" (Thompson, 2013). The burning of coal releases toxic pollution into the air, including sulfur dioxide and nitrogen dioxide, causing acid rain, which is poisonous. It falls on the ground as sulfuric and nitric acid. "Acid rain now affects about one-third of China's territory, including approximately one-third of its farmland" (Economy 2004, 18). Today, 10 percent of China's agricultural land has been contaminated by heavy metals. China is now turning to other countries and continents to grow its food (Shiva, 2015).

In the article written by Lee Liu "Made in China: Cancer Villages" in *Environment: Science and Policy for Sustainable Development*, the author notes that 459 cancer villages across China have been reported in the media, and that Qinghai and Tibet are the only two provinces that have no cancer villages. The author explains that cancer villages are characterized by abnormally high cancer rates, which are generally in direct correlation with poisonous levels of heavy metals in the water due to contamination by untreated toxic industrial waste. China's ecological overshoot has extreme consequences on the wellbeing of the Chinese population. Pollution in China is causing environmental damage on a global scale.

China's Water Crisis

The extraordinary work of Elizabeth C. Economy can be found in many different journals and publications, and so can this quote from Economy's essay *The Great Leap Backwards*:

> "The Gobi Desert, which now engulfs much of western and northern China, is spreading by about 1,900 square miles annually; some reports say that despite Beijing's aggressive reforestation efforts, one-quarter of the entire country is now desert. China's State Forestry Administration estimates that desertification has hurt some 400 million Chinese, turning tens of millions of them into environmental refugees, in search of new homes and jobs. Meanwhile, much of China's arable soil is contaminated, raising concerns about food safety. As much as ten percent of China's farmland is believed to be polluted, and every year 12 millions tons of grain are contaminated with heavy metals absorbed from the soil."

China has one fourth of the world's average water resources (Lu et al., 2008). After India, China remains the country with the world's largest number of poverty-stricken people (World Bank, 2014). In the last few decades, economic growth has lifted millions of people out of poverty. China is now the world's second largest economy after the United States, and is projected to become the world's largest economy in the coming decades. The country has become home to some of the most polluting petrochemical and toxic industrial waste in the world. Rates of environmental pollution in China top world charts. Environmental degradation is the leading cause of death in China. The New York Times reported on China's "epic pollution crisis" in an article by Joseph Kahn and Jim Yardley, "Choking on Growth, As China Roars, Pollution Reaches Deadly Extremes." "The leadership has banned publication of data on the subject for fear of inciting social unrest, said scholars involved in the research. But the results of some research provide alarming evidence that the environment has become one of the biggest causes of death" (Kahn and Yardley, 2007).

China's unrestrained economic growth, rapid modernization, unprecedented industrialization, massive urbanization and large-scale migration, as well as the lack of wastewater treatment facilities for residential and industrial waste, have had devastating consequences on the water, the air, and the soil. China's environmental pollution crisis is reaching alarming levels. China has become the most important polluter of the Pacific Ocean according to the World Wildlife Fund (Economy, 2007). Furthermore, air pollutants, mercury, and coal particulates, are transported across the Pacific Ocean by powerful winds called "Westerlies", "making environmental and health problems unexpected side effects of U.S. demand for cheap China-manufactured goods" (Reklev and Macfie, 2014). The airborne chemicals reach the West coast of America in just a few days (Richard, 2014). China's acid rain is also impacting the natural environment of Japan and South Korea (Reklev and Macfie, 2014).

> "The different composition of air pollutants, the dose and time of exposure and the fact that humans are usually exposed to pollutant mixtures than to single substances, can lead to diverse impacts on human health. Human health effects can range from nausea and difficulty breathing or skin irritation, to cancer. They can also include birth defects, serious developmental delays in children, and reduced activity of the immune system, leading to a number of diseases." (Kampa and Castanas 2008, 364).

> "The U.S. Environmental Protection Agency estimates that on some days, 25 percent of the particulates in the atmosphere in Los Angeles originated in China. Scientists have also traced rising levels of mercury deposits on U.S soil back to coal-fired power plants and cement factories in China. (When ingested in significant quantities, mercury can cause birth defects and developmental problems.) Reportedly, 25–40 percent of all mercury emissions in the world come from China" (Economy, 2007).

The severity of the water and air crisis is now threatening China's economic and political stability (Reklev and Macfie, 2014). Extreme levels of toxicity, China's international reputation, and relentless public pressure have motivated the leadership to re-evaluate priorities. Extreme levels of water pollution in China have caused biodiversity loss, adverse public health hazard, water scarcity, and major economic losses (Qin et al. 2006, 2401). There is an increasing number of people protesting across China. In 2013, Human Watch reported between 300 to 500 protests daily. When people become desperate they start challenging China's authoritarian dictatorship to reclaim their right to life.

Ma Jun is the director of the Institute of Public and Environmental Affairs (IPE), one of China's most dynamic NGO's. In 2006, the IPE developed China's Water Pollution Map database. In collaboration with Chinese governmental agencies, China's water pollution data is updated on a daily basis. Ma Jun views data transparency as a starting point for public debate. He acknowledges that information alone is not enough to reverse China's water crisis. In his talk "Environmental Challenges & China's Green Choice" at the Wilson Centre on April 1, 2011, Ma Jun explained that China's water crisis is also a consequence of global Western consumption trends. In discussing his work Ma Jun commented:

> "Water pollution is the most serious environmental issue facing China. It has a huge impact on people's health and economic development. That is why we have begun to build this database. To protect water resources, we need to encourage public participation and strengthen law enforcement. In some places, polluting factories and companies are being protected by local governments and officials." (Jun, 2011).

Lake Eutrophication

Lake Tai (the 3rd largest freshwater lake in China), Chao (5th) and Dianchi (6th), have reached water rated Grade V - extreme levels of pollution and unfit for industrial or agricultural use (Ma and Adams, 2013). They are referred to as the 'Three Lakes' (Lu et al., 2008, 1). Since 1995, the Standing Committee of the National People's Congress acknowledged the ecological recovery of the 'Three Lakes' "as one of the top national priorities" (Gao and Zhang, 2010).

Anthropogenic activities accelerate the naturally slow processes of trophic stages in lakes. The five trophic stages are respectively: ultra-oligotrophic; oligotrophic; mesotrophic; eutrophic; and hyper-eutrophic (Leira et al., 2009). The oligotrophic stage is characterized by water transparency, a diversity of submerged plant species, wildlife biodiversity, sparse algae growth, and a high concentration of diffuse oxygen in the water. Oligotrophic freshwater lakes are a healthy source of drinking water. Polluted lakes are classified as eutrophic. Eutrophication engenders abnormal ecosystem responses, accelerated biotic cycles, the proliferation, and excess of plant nutrients. Abnormal levels of plant nutrients in lakes are the by-products of anthropogenic activities, pollution-intensive economic development, rapid industrialization, and urbanization. Lake water eutrophication occurs mostly in shallow waters and is characterized by murky water and the extinction of most plant and aquatic species.

In the early 1980s, the Organization for Economic Cooperation and Development (OECD) developed a classification system to measure trophic states. This method includes the computation of four variables: phosphorous; nitrogen; chlorophyll *a*; as well as water transparency. This scientific method is based on the calculation of standard deviation for each variable and computation of the mean value. The increase levels of phosphorous and nitrogen elements in the water provoke abnormal response in phytoplankton biomass, subsequently causing abnormal bacterial response leading to ecosystem instability. The acceleration of the biotic system "increases the productivity (or the rate of photosynthesis) of the aquatic ecosystem" (Qin et al., 2013). Eutrophication causes lakes to become inert, therefore, aquatic species and submerged plants become extinct due to the shortage of oxygen in the water.

Lake Dianchi, located in Kunming municipality, is the largest freshwater lake in Yunnan, southwestern China. Lake Dianchi drainage basin is home to the leading floriculture industry and is the flower export base (SICAS, n.d.) in Asia. One of the main sources of pollution causing eutrophication in the lake Dianchi drainage basin is the overuse and discharge of synthetic fertilizers used by industrial horticulture. Synthetic

fertilizers undergo an increase of "more than 1.5×106 t each year" (Qin et al., 2006). This mushrooming multi-million dollar export industry, US $260 million (Canada-China Agriculture and Food Development Exchange Centre, n.d.) has lifted 20,000 Chinese peasants out of poverty (Clements-Hunt, 2004) through the large-scale production of local and imported breeds, including roses and water lilies, as well as orchids, daisies, and carnations (Yang, 2013). The Dounan village flower market in Kunming is the largest wholesale flower market in China. Domestic and industrial untreated wastewater, the dumping of industrial toxic waste, as well as chemical fertilizers used in industrial horticulture have all contributed to extreme levels of water contamination in lake Dianchi drainage basin (Ma and Adams, 2013). Eutrophication of lake Dianchi has caused massive economic losses for the local communities, impacting fisheries, tourism, and exacerbating water scarcity for Kunming municipality residents (Jin, Wang, and He, 2006). For example, when I was in Kunming in 2012, at the youth hostel where I was staying, we were informed to use the water between very specific hours during the day.

South-North Water Transfer

Earth's groundwater supplies a dependable perennial source of freshwater. Groundwater is interconnected to the ecological balance of rivers, lakes, as well as is indispensable for groundwater-dependant ecosystems, and in many parts of the world is the number one source of drinking water (Lapworth et al., 2012). The groundwater in China provides 70 percent of the drinking water supply in the dry northern and northwestern regions (Li, Wu, and Wu, 2011; Qiu, 2010; Economy, 2007).

The Chinese leadership intends to compensate for the depletion of groundwater in the dry North Plain by transferring 45 billion cubic meters of water yearly from China's water-abundant south. The South-North hydraulic project is projected to be completed by 2050 and provide water transferred from the Yangtze River Basin (Berkoff, 2003) to the North China Plain, and more specifically to the dry regions of the Yellow, Hui, and Hai River Basins (Berrittella, Rehdanz, and Tol, 2007).

China has approximately 7 percent of the worlds freshwater with 1/5 of the world's population. The North China Plain is where 25 percent of China's grain is cultivated and where 25 percent of China's population resides (Berkoff, 2003) with water availability lower than the world international scarcity levels between 348 to 729 m3 per person (Zhang and Zhang, 2001). Unfortunately, this large-scale water diversion project will certainly have unpredictable and irreversible ecological ramifications.

> "The analysis shows that north China annually exports about 52 billion m^3 of water in virtual form to south China, which is more than the maximum proposed water transfer volume along the three routes of the Water Transfer Project from south to north." (Ma et al. 2006, *Abstract*).

Thousands of petrochemical plants have been built along the Yellow River. China's groundwater depletion has reached alarming levels due to the overexploitation of nature and acute levels of industrial pollution. Groundwater contamination is threatening water supplies (Economy 2007, 42).

> "Pollution is also endangering China's water supplies. China's ground water, which provides 70 percent of the country's total drinking water, is under threat from a variety of sources, such as polluted surface water, hazardous waste sites, pesticides and fertilizers." (Economy, 2007).

The Ministry of Water Resources (MWR) calculated that two-thirds of China's 660 cities experience water scarcity (Qiu, 2010). Water is fundamental to life and society for a sustainable economy and survival. The

Yellow River has reached extreme levels of water pollution, and yet "supplies water to more than 150 million people and 15 percent of China's agricultural land, but two-thirds of its water is considered unsafe to drink and 10 percent of its water is classified as sewage" (Economy 2007, 43).

This human rights disgrace has to be understood within the dynamics of globalization and as it relates to neoliberal political economic trends. The strategic coordination of groundwater monitoring, including data sharing, transparency, and civil participation, as well as the systematic implementation of water protection laws, environmental regulations and policies will be prerequisites to sustainable groundwater management.

Three Gorges Dam

There were only twenty-two dams in China before 1949 (World Commission on Dams, n.d.). Today, the country is the world's largest producer of hydropower with a total capacity of 170,000 megawatts. Sinohydro is a Chinese state-owned enterprise and a key player in hydropower production on a global scale (Urban and Nordensvard, 2014). China is home to 22,000 hydroelectric dams, the largest number of any country in the world (World Commission on Dams, 9), and half of the world's largest dams. Charlton Lew defines the rate of development of hydropower and mega-dams in China as "unmatched in human history" (Lewis, 2013). It was a key element of the country's 12th Five Year plan (2011-2015) (Urban and Nordensvard, 2014). Trans-boundary hydro-politics are of paramount importance for the Chinese leadership because of their associations with Sino-Indian, and Sino-Southeast Asian trade relations and regional stability.

> "China takes seriously India's concern about the trans-border rivers, and we are ready to further improve the joint working mechanism. [...] I would like to assure our Indian friends that all upstream, development activities by China will be based in scientific planning and study and will never harm downstream interests." (Chellaney 2011, 193).

Dams impact the natural flow of rivers (Biba 2014, 77). Dam-building engineering projects have destructive ecological consequences on watershed and river biodiversity. Dams cause flooding and harm riparian communities. One of China's most significant example is the construction of the

Three Gorges Dam. The Three Gorges Dam, the world's largest hydroelectric project, caused major environmental degradation, the destruction of cultural relics and historical sites, as well as flooding of many villages, and uprooting and displacing of large number of communities along the Yangtze River. The construction forced 1.3 million residents to be relocated (Urban and Nordensvard, 2014). Expropriation for this project was managed inappropriately; often citizens were forced out of their homes and off their lands without appropriate compensations.

> "To date, the government has ordered some 1.2 million people in two cities and 116 towns clustered on the banks of the Yangtze to be evacuated to other areas before construction, promising them plots of land and small stipends—in some cases as little as 50 yuan, or $7 a month—as compensation." (Hvistendahl, 2008).

Nevertheless, it continues to be a source of national pride and represents a symbol of China's engineering prowess. This project has gained both national and international attention, and several new large scale dam-building projects have been opposed domestically as a result. China's large-scale dam building has become a politically sensitive and controversial topic.

Hydro-Politics

The Mekong river basin is home to the world's richest fishery and is one of the most biologically diverse area in the world. The Lower Mekong river basin is home to approximately 60 million people, who all depend on the ecological health and productivity of the watersheds for their survival. 'Although there are many factors which contribute to the ecological deterioration of watershed ecosystems, dam-building industries are the most threatening (World Commission on Dams, 2000). The Mekong river has become an important site for Chinese state-enterprise dam-building projects. The dams along the Upper Mekong river basin alter the hydraulic flow of transnational rivers (Biba, 2014). State-enterprise dams have trans-boundary implications for downstream riparian countries. In 1995, Laos, Thailand, Cambodia, and Vietnam, founded the Mekong River Commission with the objective of protecting the ecosystems and communities along the Mekong River.

Since 1995, the Mekong River Commission (MRC) member countries cooperate with the aim of mutual interests. This cooperation includes "all fields of sustainable development, utilization, management, and conservation of the water and related resources of the Mekong River Basin." The collaborative framework includes "irrigation, hydro-power, navigation, flood control, fisheries, timber floating, recreation and tourism. [...] MRC members have agreed to cooperate in all dimensions of fisheries management, to protect the ecology and aquatic life of the Mekong River Basin from anthropogenic activities, or other harmful effects" (Food and Agriculture Organization of the United Nations, n.d.).

Although China has chosen not to join the MRC, it made an agreement to exchange hydrological information with the riparian countries after 800 people died along the Mekong Delta in a flood in 2000 (Biba, 2014). China's domestic hydro-political planning strategy relies on reconciliation with international agents to guarantee domestic stability with the neighbouring states. China's position is to defuse potentially mounting tensions, and build or restore trust in China's peaceful development path (Biba, 2014).

Kamchay Dam was built by Sinohydro in Mak Prang Commune in Teuk Chhou District of Kampot Province, Cambodia. The dam is located in the Southeast region of the Bokor National Park, a protected area for the collection of non-timber forest products. The Kamchay Dam project was approved in 2005 by the Royal Government of Cambodia (RGC), and began operating in 2011. According to the World Bank, 30 percent of Cambodia's population had access to electricity in 2010. Until recently, most of electricity in Cambodia was imported and very expensive. Kamchay Dam was Cambodia's first dam project, which partly accounts for the poor management of the social and environmental impacts of the project. The 2009 Environmental Impact Assessment (EIA) guidelines were not followed, and the Environmental Management Plan (EMP) was not yet structured when the construction of the dam began. As a result, low-income communities, and women specifically, were economically affected. Although electricity became more affordable for locals after the construction of the Kamchay Dam, the poorest communities continued to lack electricity. Dam-building investments in Southeast Asian countries require the construction of infrastructure, which also takes into consideration the local lifestyle and environment. The construction of hospitals and schools is central to China's cooperation strategies in Southeast Asia.

International Trade Law

World water scarcity requires that water be monitored and managed sustainably on a planetary scale. Ethically, there is an urgent need to endorse an international sustainable economic and trading system, which includes corporate water stewardship as a prerequisite to the wellbeing of all life on Earth. In 2000, the World Water Commission already made the recommendation of the full-cost pricing of water as an economic good (Mekonnen and Hoekstra, 2010). Absence of a shared value system between stakeholders, institutional capacity failures, and high levels of corruption are major obstacles to environmental protection and sustainable economic development. Integrated cooperation between international political structures and institutions (macro-analysis), and local approaches to ecological adaptation (micro-analysis) are required for global/local ecological health and water stewardship. In this vein, China's new law promotes "societal supervision" of polluters and regulators through greater transparency, public participation, and the right to sue polluters (Rooij and Wang, 2014).

The intergovernmental system for international trade law dispute settlement is founded on neoliberal trade principles concerned with maximizing profits at the expense of human rights and the protection of the biosphere. In his scholarly research on 'Coordinated Compliance,' Dr. Pitman B. Potter addresses the issue of conceptual divergence between agencies for the application of international trade laws and/or human rights.

> "China's engagement with international human rights standards underscores a normative position giving primacy to the role of the Party/State in furthering development. Official orthodoxy on issues of civil and political rights such as democracy and the rule of law, while appropriating language drawn from international standards, tends to subordinate civil and political rights to the authority of the Party/State. China also rebuts aggressively international human rights standards with which it disagrees. International civil and political rights standards are routinely dismissed as reflecting Western bias and unsuitable to China's need for stability and development. This approach lends substantive operation to the abstractions of the 'socialist rule of law' as they pertain to human rights. The imperative of Party rule mandated by Four Basic Principles informs the operations of legislative, judicial, and administrative organs involved in human rights protection, and find expression in the privileging of the imperatives and authority of the Party/State through the discourse of the right to development." (Potter, 2013).

Transparency in the policy-decision making process is essential for the fair representation of all stakeholders. Stimulating transparency practices in policy-making processes at all levels of governance are fundamental to the sustainable management of natural resources, including freshwater. Some scholars point to the importance of transparency in policy-making and WTO multilateral negotiations. The lack of transparency during WTO negotiations enables trade benefits profiting the interests of powerful corporations. Since the 1999 WTO Ministerial Conference in Seattle, political pressures from non-governmental agencies, human rights activists, environmental organizations, and labour groups, have been successful in establishing significant improvement in transparency practices within WTO negotiations (Perez-Esteve, 2012). Nevertheless, corporate social responsibility remains omitted from the WTO international trade law legislative framework. Although environmental protection is mentioned in the preamble of the GATT and WTO, in both agreements environmental and human rights clauses are systematically excluded. This systemic paradox threatens humanity's ability to adapt to the human ecological crisis.

The United Nations Intergovernmental Panel on Climate Change (IPCC) has warned the international community that climate change is imminent. From an ethical standpoint, it would be beneficial for planetary interests and humanity as a whole if WTO initiatives, as a body for global legislative trade governance, developed ecological strategic principles to adapt international trade and resource extraction to Earth's biophysical capacity for a sustainable economy. This transition to a low carbon economy will include prioritizing localized economy in China, Canada, and on a global scale. Through a committed effort, humanity will be able to reduce global inequality and promote more equitable access to Earth's natural resources. Furthermore, international trade laws must guarantee the human right to fresh water, which is part of the human right to survival. There is an urgent need to integrate in the WTO's legislative apparatus binding human rights and environmental protection laws to counterbalance the negative dynamics of globalization. We have reached the limits of the rationality of the neoliberal legal system (Grinlinton and Taylor, 2011). This ending quote is from an extraordinary book, *Property Rights and Sustainability: The Evolution of Property Rights to Meet Ecological Challenges*, edited by David Grinlinton and Prue Taylor.

Roman law hominum causa omne ius constitutum est

(All law is created for the benefit of human beings)

> "All life is sacred and embedded in an interconnected and interdependent web of ecosystems, nested into the ecosphere. The Earth has intrinsic value. The biotic environment is in critical need of natural resources management systems for the restoration of the ecosphere, the Earth's ecology, biodiversity, for the survival of this generation, and to sustain future generations. Restructuring the concept of Property Rights, inspired by ancient indigenous ecological principles, traditional knowledge, and the implementation of Common Property Regime resources management system will facilitate the appropriate restoration. This will be attained through a legal paradigm shift, to include ecological sustainability and promote the well-being of humans and other forms of life."

In Chinese the word for crisis is 危机, composed of the words 'danger' 危 *wei* and 'opportunity' 机 *ji*. Humanity is at a historic-spiritual crossroad. This is a moment in history in which everything must be challenged, deconstructed, re-imagined with fierce creative necessity to address the world's mounting danger. At this time of aberrant inequality in global wealth distribution and catastrophic environmental degradation, civil society, environmental activists, artists, scholars and scholarly institutions, universities, researchers, lawyers, and judges all have an ethical responsibility to participate in the trans-disciplinary critical analysis of international trade law.

The radical restructuring of the system of laws to include ecological sustainability based on indigenous principles is discussed at the edge of academia. Legal theory and the critical analysis of classical legal doctrine are the foundation for a new legislative architecture. Furthermore, I will argue dialectically that this inescapable paradigm shift (Grinlinton and Taylor, 2011), of which we have seen the seeds, is a sacred process because of the ethical magnitude of its human-ecological impacts. This paradigm shift includes "resources management systems for the restoration of the ecosphere" within the international legislative body for "the Earth's ecology, biodiversity, for the survival of this generation, and to sustain future generations" (Grinlinton and Taylor, 2011).

Conclusion

Solutions should aim at honouring the limits of Earth natural abundant resources, elevating humanity with soulful dignity through the establishment of a more equitable wealth distribution and access to essential resources. This must include the human right to clean fresh water on a planetary scale. The international sacred legislative apparatus is a key toolset to be amended and restructured as to serve the needs of humanity and solve the problems associated with the global human ecological crisis. International law must enable humanity in achieving ecological balance and global peace. Law is intended to support the Commons and well-being of all of humanity, and is truly meaningful because of the ethical context within which it operates. For the body of law to conserve authority, the inclusion of global sustainable resources management and the restructuring of wealth distribution are mandatory. International law embodied authority can be sanctioned by a continued adjustment to evolving global environmental and social conditions for the well-being of the web of life, humanity, and the health of ecosystems and the biosphere.

This research is a reverence to the sacred essence of water.

Water is Life.

A special thank you to my friend Megan Millward for the relentless volunteer work she has generously offered throughout the years, the research to support the progression of the production of *Dragon Tears*, as well as her support in helping me edit my writing, as well as many hours of Mandarin classes. Thank you so much for your support and friendship. Thank you for believing in me.

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