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Water Ethics

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1. Introduction

Ethics refers to the broad value principles and rules, whether tacit or explicit, that provide guidance about the proper course of action. Decisions about water management and policy cannot *not* reflect underlying principles embedded in society and culture. While individual psychology also matters, the field of ethics focuses attention on collective standards of behavior. By understanding what we value about water and the natural ecosystems where water is found, and what we value for our own lives as members of multilayered human communities, we can assess, or "reflect upon" the wisdom of a potential course of action. Ethics is our platform for judging whether a potential action would be desirable or not, and for guiding our vision for what the UN Sustainable Development Goals refer to as, "The World We Want".

Ethics, in other words, provides a framework for considering the implications of our values, and helping us to assess whether the values we hold are actually the values we wish to keep holding. If I place a strong value on the rights of companies to dump their manufacturing waste into the nearest river, the ethical implication is that government should not regulate water pollution. But if an implication of this value (the right to pollute) is that children are dying from carcinogenic contaminants in their drinking water, I might be motivated to revise my values and adopt the value proposition that human health is more important than the freedom of companies to pollute. The ethical implication following from my re-prioritized values is that water pollution should be regulated after all.

Values cannot protect our water supplies; values can only theorize that clean water is a high priority. The ethical implication of the high value placed on clean water is that we should regulate water pollution, or we should impose stringent drinking water standards, or the city should provide free bottled water to all residents whose tap water does not meet drinking water standards, as was ordered by a judge in Flint, Michigan for several months during the Flint water crisis (Clark 2018). There can be many alternative responses to a

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situation of water-related harm, defined as a violations of values (Ziegler et al 2017). But identifying the situation as a problem (e.g., lead levels in Flint children should not be so high) depends on having values about the importance of children's health and the equal rights of people regardless of race or class to enjoy safe and affordable water. Without strongly held values about human welfare, water regulators in Flint ascribed the high lead readings to other environmental factors (leaded paint) or sampling errors (Clark 2018). Having the right values is essential to formulating ethical principles that align with those values, though ethical reflection is still needed to guard against perverse outcomes of bad values being reinforced by bad ethics.

1.1. Recognizing Values

Values about water, beyond the usual economic values, are finally getting serious attention in many venues: the UN High Level Panel on Water's "Bellagio Principles" on valuing water (HLPW 2017); the Vatican conference on water values on World Water Day last year (worldwatervalues.org), and American water utilities sounding the alarm for greater investments in urban water infrastructure (thevalueofwater.org). Water is increasingly recognized as something more than a factor of economic production, and rivers are viewed as more than nature's plumbing systems. Managing water effectively entails addressing the complex range of cultural, social, and psychological values embedded in water policies, projects, and investments.

Values are resources that, like water itself, can help us attain our broad social, economic, and social goals -- the well known "triple bottom line". Values operate at a foundational level where we formulate the specific goals and objectives to be achieved through water policies. This relationship was laid out by Ralph Keeney (1992) in his book, *Value-focused Thinking: A Path to Creative Decision-Making* and later elaborated by management guru, Richard Barrett (2014), in his notion of "values-driven organizations". It is not money, fame, or even sex that directly motivates people; rather, people are motivated by their values about the importance of attaining these (and many other) goals. Values are powerful but messy. Our values, goals, and specific objectives need to be sorted out carefully and deliberately. This is where ethics, and specifically "water ethics," comes into play. Ethics is the art of deciding what action should be taken in light of one's values, while at the same time holding up the values themselves for critical examination. Will the expression of these values lead to good outcomes?

Ethics, in other words, should be part of our decision support toolbox. Should the proposed dam be approved, modified, or rejected? Cost-benefit analysis cannot deal with intangible values very well. Legal arguments about the dam might invoke moral arguments, but legal decisions are based on existing laws, which usually reflect old ethical assumptions. The growing interest in water values is framed as a way of bringing a broader and more contemporary perspective to bear on water decisions. But then what? Where does the path of values-analysis lead us? Are we simply enlarging the chorus of values-driven special interests? How can we promote water decisions that respond to the greater societal good, rather than to the strongest pressure group?

While it would seem that an ethics perspective would offer a valuable complement to conventional water decision-making methods, it is almost never used in any systematic way. Very few analytical reports on water use the words, "ethics," "ethic" or "ethical" even in the context of discussing water values, the building blocks of ethics. For example, a recent Science Magazine article on "Valuing water for sustainable development" (Garrick et al 2017) does not mention ethics. The final report of the UN High Level Panel on Water (HLPW 2018) presents five principles for valuing water "in all its dimensions....which may be cultural, spiritual, emotional, economic, environmental, or social" but without any mention of ethics. The UN report suggests that reconciling conflicting values be done "in ways that are equitable, transparent and inclusive." But with no reference to ethics, what would be the basis for prioritizing some values over others? How will allowable pollution levels be decided? What does it mean to "protect" water sources or to provide "equitable" access to safe water?

1.1.1. Money Isn't Everything: The Case of the Orme Dam

In the simpler era of the late 20th Century, conflicts over water values were typically settled by economic cost-benefit analysis, based on monetizing the value of various costs and benefits. This approach assumed that different sorts of values were somehow commensurable and could be expressed on a monetary scale. The Orme Dam, proposed in the 1970s to be built on the Verde River near Phoenix, Arizona, would have inundated nearly two-thirds of Yavapai Indians' territory. Along with their land, their ancestors' graves would be lost, as well as the nesting area for several bald eagles. The Yavapai perceived that their entire culture was at stake. The tribe had suffered a history of hardships during nineteenth-century conflicts with the US military; their lands had been reduced, but their legal rights to their remaining lands, on the Fort McDowell Reservation, were secure; the Yavapai tribe could take a lucrative settlement and move to another location, or they could stay on their land and forgo the money. In a 1976 referendum, the tribal community voted against selling their land for the dam. The tribal chairman accepted their vote: "I have heard my people's answer. I don't care if you give a million dollars to each and everyone of us. Our answer will still be no" (as cited in Espeland, 1998, p. 208). November 12th, the day the US secretary of the interior officially withdrew the dam proposal in 1981, has since become an occasion for celebration: the Orme Dam Victory Days, an annual event of the Fort McDowell Yavapai Nation.³

1.1.2. Ethics of Water Quality

The topic of Water Ethics takes on a fundamental importance in dealing with the ethical principles underlying the use and protection of the essential basis of life itself: water. What could be more important than the ethical principles by which life itself is protected? There is an intuitively obvious need for assessing whether a proposed drinking water standard for a particular class of chemicals -- Let's take the case of PFAS-related chemicals⁴ -- strikes the right balance between what is possible and what is desirable. An ethicist might ask why the

³ <http://www.fmyn.org/event/orme-dam-victory-days/>

⁴ Union of Concerned Scientists 2018, <https://www.ucsusa.org/sites/default/files/attach/2018/09/a-toxic-threat-pfas-military-fact-sheet-ucs-2018.pdf>

maximum PFAS level recommended by the US government's public health agency⁵ is seven times lower than the level recommended by the policymakers at the US Environmental Protection Agency. What value principles are being expressed in the divergent recommendations?

An ethicist would consider society's responsibility to protect public health, potential effects on natural ecosystems, and implications for the industries using these chemicals. Sadly, but not surprisingly, "ethicist" is not part of any job description that I am aware of within the water sector. While ethics are always operating, albeit tacitly, to guide water decisions, analysis of those ethics is rarely conducted. We are quite literally managing our water -- the basis for all life -- without considering the ethics of what we are doing. Should we adopt EPA guidance on PFAS levels, or the far more stringent levels proposed by ASTDR?

The ethical tools that we have developed within the water sector revolve around a few basic principles that are non-controversial, such as transparency and anti-corruption, the human right to water and sanitation, and the importance of sustainability, participation, and social justice, including gender equity. These issues can be addressed within the dominant water paradigm of Integrated Water Resources Management (IWRM) which views water as a resource that needs to be managed in an integrated way. So long as we can continue to live within the established liberal world order (Ikenberry 2018), we can settle our disputes the way we always have done, but our days may be numbered. Whether for reasons of feeling drawn to a different world, or pushed out of our old world, we will need to confront bigger water-related controversies: Should we be building more mega dams (already in the pipeline) or decommissioning existing dams? Under what conditions should mining be carried out? Should nuclear power be part of our future? Can we create a different food system based on agroecology and plant-based proteins? Will the oceans become our gardens or our waste stream? Will rivers become cleaner or dirtier? Will they flow more or flow even less?

1.2. The Emergence of Water Ethics

The formal study of ethics applied to water owes its establishment largely to the 1998-2004 UNESCO-COMEST initiative on Water and Ethics (Delli Priscoli et. al. 2004). A background paper on "Ethics of Freshwater Use" (Selborne 2000, pp.7-8) presented six universal ethical principles "directly applicable to the issue of water": (1) human dignity, (2) participation, (3) solidarity, (4) human equality, (5) common good, and (6) stewardship. The initiative produced a series of fourteen reports on various aspects of water ethics, ranging from gender to groundwater to environment, plus an integrative report, *Best Ethical Practice in Water Use* (Brelet and Selborne 2004). A few years later, the Bangkok office of UNESCO produced a report on *Water Ethics and Water Resource Management* (Liu et al. 2011) as part of the project on "Ethics and Climate Change in Asia and the Pacific." And just recently, UNESCO-COMEST undertook a broader assessment of water ethics, including the oceans, under the title "Water Ethics: Ocean, Freshwater, Coastal Areas" (COMEST 2018).

⁵ The Agency for Toxic Substances and Disease Registry (ASTDR), a division of the Centers for Disease Control and Prevention at the US Department of Health and Human Services.

The UNESCO initiatives had the dual purpose of highlighting how ethics plays a role in decisions about water use and management and in prescribing what that role should be. These themes were continued by the Botin Foundation in Spain, which sponsored two seminars on water ethics in 2007 (Llamas et al. 2009) and 2010.⁶ Independent from this "UNESCO lineage" is the work of David Feldman whose book, *Water Resources Management: In Search of an Environmental Ethic* (Feldman 1991), pioneered the application of environmental ethics to water management within the United States, and Sandra Postel, who demonstrated the relevance of ethics to water with her book, *Last Oasis: Facing Water Scarcity* (Postel 1997).

The field of Water Ethics today is still in a state of emergence, and can be described as a main stem of "water ethics" proper, complemented by a number of new branches addressing normative dimensions of water governance, but without using the ethics label. These branches of water ethics do not self-identify as "water ethics" but promote strong norms that are ethics-like in character: (1) Water integrity, (2) Water stewardship, (3) Water justice, (4) Ecosystem services, and (5) Rights of Nature. These branches share the overarching goal of sustainability, emphasizing complementary aspects of this concept ranging from the institutional (Water integrity) to the social (Water Justice) and the environmental. A sixth branch of water ethics runs counter to the sustainability paradigm, advocating for a normative system of water behavior that can be labeled as "Water Extractivism". This "anti-ethic" fits within our loose definition of water ethics as comprising a set of values and general principles about water which its proponents regard as desirable and in this sense "good". Taken together, these six branches of water ethics constitute an "ecosystem" of normative approaches to water within which the field of "water ethics" proper exists as an island of self-identifying specialists who deliberately employ the terms, *ethic*, *ethics*, and *ethical*. These six branches, plus the main stem of water ethics, are outlined below:

1.3. Six Branches of Water Ethics

1. Water integrity. With roots in the anti-corruption movement, the concept of water integrity centers around transparency, accountability, and participation. Transparency refers especially to information about water infrastructure and service contracts as well as water data. Accountability refers to budget processes as well as the maintenance of professional standards of good practice. Participation refers to stakeholder engagement in water planning and policy decisions, and can also refer to direct management participation of water users in operating irrigation systems or urban water supply systems. The Water Integrity Network (<http://waterintegritynetwork.net>) is the institutional home of water integrity focusing especially on institutional capacity building of operators and decision makers in urban water supply systems (WIN 2016).

2. Water stewardship. Water stewardship has become the catchword for corporate social responsibility within the water sector. The CEO Water Mandate, a UN-affiliated initiative, and others within the business community have adopted the term to describe their sustainable water activities. For example, Business for Water Stewardship

⁶ See Llamas (2012) and Delli Priscoli (2012) for an overview of the 2010 seminar.

(<http://businessforwater.org>) partners with the National Geographic program *Change the Course* (<http://changethecourse.us>) and other initiatives to provide, “a portfolio of services that catalyze business engagement and leadership in environmental water stewardship” (Business for Water Stewardship 2018). The Alliance for Water Stewardship (AWS, <http://a4ws.org>), a partnership of environmental organizations, businesses, research institutes, and others, has developed the Water Stewardship Standard, a detailed set of guidelines certified by trained compliance consultants. The standard is concerned primarily with environmental indicators but also includes some social justice and engagement indicators.

3. *Water justice*. While social justice has long been a recognized theme of water activism, there has been a more recent application of 'water justice' as an overarching perspective on water (Zwarteveen and Boelens 2014; Harris et al. 2017; Sultana 2018; Boelens et al. 2018). What distinguishes water justice as a field is the reinterpretation of recognized moral concerns about water rights – such as intergenerational justice, water rights of Indigenous Peoples, and health impacts from water contamination whether from chemical spills, agrochemical runoff, mine tailings, oil and gas pollution, etc.. Water justice refers to the ways in which water is allocated to competing demands of agriculture, industry, cities, etc. and within each of these use sectors, who gets how much water and how safe is that water for people and nature.

4. *Ecosystem Services*. The looming environmental crisis has prompted the development of new ways to value the natural environment, including water ecosystems. The concept of ecosystem services recognizes the broad range of benefits that society derives from natural ecosystems, and tries to measure the value of nature’s services, typically in monetary terms. The approach has led to new appreciation for the economic value of recreation and non-consumptive uses of rivers, including their existence value and the role of protected areas as reserves of biodiversity (CAPNET 2016). While non-economic benefits such as spiritual communing with nature, or the pleasure of viewing the beautiful river, are theoretically included as an ecosystem service, ascribing values to non-marketable benefits is challenging. The result has been an over-emphasis on economic values that can be measured and monetized, and an under-emphasis on subjective benefits that cannot be monetized (Boelens et al 2014).

5. *Rights of Nature*. No longer the exclusive domain of philosophers specializing in environmental ethics (e.g., Nash 1989; Boyd 2017), the idea that we should recognize nature’s intrinsic rights has entered the constitutions of Ecuador and Bolivia, and it receives serious attention within the United Nations.⁷ In addition to inscribing rights of nature into national laws, another approach is to claim legal rights of personhood for rivers (Iorns Magallanes 2019) based on the precedent-setting personhood accorded to the Whanganui River in Aotearoa New Zealand.

6. *Extractivism*. This last branch of water ethics refers to the application of moral arguments to justify what can also be viewed as, "the excessive and irresponsible

7 Following the Rio+20 meetings in 2012, the United Nations launched a “Harmony with Nature” website featuring examples of national legislation aimed at protecting nature, <http://harmonywithnatureun.org/>.

exploitation of natural resources in order to meet the growing 'needs' of our over-consumerist societies" (France-Libertés 2017, p. 6). "*Extractivism* is a mindset and a pattern of resource procurement based on removing as much material as possible for as much profit as possible" (Willow 2019, p. 2). In countries experiencing "regulatory capture" (Dillon et al 2018) by corporate interests, an ethic of extractivism becomes written into national environmental regulations, including water policies. An illustration is the Trump Administration's rollback of clean water regulations at the behest of industry, and the earlier exclusion of the coal, and oil and gas industries from complying with the Clean Water Act. Justifications range from providing jobs to national security (energy independence) and in the case of sacrifice zones on tribal lands in the American Southwest during the Cold War, for weapons production (Voyles 2015). This "dark side" of water governance makes use of monetized values and normative value principles (ethics) to justify social inequity and ecological harm. Treating the "anti-ethic" as itself a type of ethics might seem preposterous, but if we are to develop a legitimate field of water ethics, we can ill-afford to exclude viewpoints that we disagree with. Better to include the dark side as a type of ethics which is subject to the same ethical assessment as all other types.⁸

The net impact of these approaches – integrity, stewardship, justice, ecosystem services, rights of nature and even water exploitation – is an emerging discourse about how to think about water and how to respond to increasing water stress and climate change. "Integrity" in water governance is about cleaning up the governance process (anti-corruption and transparency), but it also begins to address professional integrity and governance outcomes. "Stewardship" is primarily an environmental concept, though it can also include issues of labor conditions and social justice. "Water justice" is about people in a broad context, including intergenerational environmental justice. Ecosystem services is, of course, environmentally focused, but the implications extend to economics and culture, while the deeper issue of "rights of nature" goes beyond environmental ethics per se to the ethics of respecting Indigenous cultures who see nature as sacred. It is no coincidence that the two countries to adopt "rights of nature" provisions into their constitutions, Ecuador and Bolivia, also have majority Indigenous populations. Conversely, the approach of water extractivism is built around the interests of investors and political opportunists seeking to profit from the impending chaos of climate change.

1.4 The Main Stem of Water Ethics

Having considered these six branches of ethics-like schools of thought, we turn now to the main stem of water ethics, the only one which self-identifies with an ethics terminology of ethic, ethics, and ethical. These words contain important nuances of meaning. The word "ethic" refers to a particular set of principles, while "ethics" has two different meanings: (1)

⁸ The ethics of water exploitation is often couched in terms of freedom from national-level environmental regulations in favor of more easily captured local regulatory bodies. For example, the 2016 Platform of the US Republican Party states, "We must never allow federal agencies to seize control of state waters, watersheds, or groundwater. State waters, watersheds, and groundwater must be the purview of the sovereign states....We firmly believe environmental problems are best solved by giving incentives for human ingenuity and the development of new technologies, not through top-down, command-and-control regulations that stifle economic growth and cost thousands of jobs."

As the plural of ethic, it refers to distinct and different sets of principles; and (2) As a singular noun that does not have a plural version, “ethics” refers to the overall field of knowledge about ethical principles. Applying these meanings to water, we have “water ethic” which refers to one coherent set of principles about how water ought to be managed, “water ethics” (plural noun) referring to multiple and often competing sets of principles, and the field of “water ethics” (singular noun) referring to the study of ethical principles related to water.

Ethics introduces the integrative reference of “the good” as a decision-making gold standard. It sounds elusive because it necessarily is. If values are the Christmas tree ornaments, ethics is the tree, the principles underlying the values. Some of these ethical principles are couched in the language of rights: the human right to water; the cultural right to traditional spiritual practices; the natural right of a river to flow, and the right not to be discriminated against on grounds of gender, race or culture. Other ethical principles are derivative principles articulating specific standards for management of water resources, e.g., the principle of management subsidiarity (Dublin Principles 1992) which derives from the ethical value of democratic governance, and the principle of water as a commons, elaborated by Nobel-laureate Elinor Ostrom and others.

1.4.1 A Water Ethics Framework

Analyzing or “reflecting” on water values can be facilitated by a framework that focuses our reflection on particular domains or categories, and on the interactions across value categories. This process of ethical reflection helps in sorting out the values and deciding which are most or least important. But ethical reflection aims higher than merely establishing value hierarchies; it aims towards action: What values are we expressing through the ways we use water? The water ethics framework presented here is taken from my 2013 book, *Water Ethics: A Values Approach to Solving the Water Crisis* (Groenfeldt 2013)⁹ and from the draft Global Water Ethics Charter (Ziegler and Groenfeldt 2017) which is elaborated below. This framework is constructed around five value categories in the context of water:

1. *Environmental values* – Values about the health and welfare of fish, wildlife, rivers, wetlands, aquifers, and the whole water-linked ecosystem;
2. *Economic values* – about not wasting resources and finding least-cost solutions; applying water to its most productive uses; and recognizing economic values embedded in other kinds of values, like ecosystem services of the river and the tourism potential of water recreation.
3. *Social values* – Values about equity and social justice (not shutting off the water service for poor families that have no income; not situating the uranium mine in Indian country just because it’s easier to get a permit there) as well as values about social benefits from water: safe water and sanitation; healthy rivers and wetlands; the social benefits of a robust agricultural economy that depends on secure water for irrigation.
4. *Cultural values* – Spiritual values about rivers and springs, whether a special spring like Lourdes or every river in Australia, which are all sacred to Australian First Nations; emotional and aesthetic benefits from walking along a river, kayaking on it,

⁹ A second edition of this book was published in 2019 (Groenfeldt 2019).

or swimming or fishing in it, and our relationship to water bodies as part of our place-based cultural and personal identities.

5. *Governance values* – Values about who should be involved in decisions about new water investments or policies, and the institutional architecture for making those decisions at multiple levels.

These values are relevant not only to direct water decisions (e.g., how much water should go to irrigation) but also to the “values-chain”, the values advanced through the way that the irrigation water is used and the crops produced. What agricultural practices does the irrigation water support? Are the farm workers adequately compensated (social values)? Are pesticides impacting the groundwater (environmental values) or drinking water (social values)? Do the crops grown enhance cultural identity? Nutrition? Environmental services? Do the soil management practices sequester carbon (CO₂ offsets) and capture water? The ethical ripple effects can be far-reaching, extending to consumer health, economic security, and personal and planetary well-being (Molders 2014).

In addition to the five value categories we can distinguish four general principles: (1) Precaution (We should approach this interconnectedness between humans and nature with an attitude of humility and adopt the fundamental principle of precaution to guide our management interventions.), (2) Water as a commons (We all depend on water and have a shared responsibility for its management (Kallhoff 2017), (3) Intergenerational justice (We have a responsibility to all future generations to be good stewards of their water today) and (4) Knowledge and education (We have a moral obligation to generate knowledge about water in all its aspects and attend to the governance of that water knowledge). We can also distinguish between *describing* the ethics already in place (*descriptive ethics*) vs. advocating for the ethical principles one finds desirable (*prescriptive ethics*). A second distinction is between *preventative ethics*, which focus on what we should NOT do (Don’t pollute!) and *aspirational ethics*, which focus on what we would like to see happen (Restore the river!).

Finally, there is an over-riding “meta ethic” about water governance that borrows from the field of medical ethics, where the practice of ethics related to medical decisions has become the expected and often legally mandated practice. The meta-ethic for water goes something like this: Since water is fundamental to life itself, decisions about how water is managed and governed should be guided by ethics. It is, in effect, unethical to make major decisions about water that do not consider the ethical implications. We have a moral responsibility to treat water decisions with serious attention, and ethics needs to be part of that attention.

1.5. Working with Ethics

A key feature of values-based decisions is the notion that the values we hold dear are not necessarily obvious even to ourselves. The first step in working with values is a process of self-discovery, identifying what our values are and making them explicit, and deciding which ones are core/fundamental values and which ones are less important. In the case of a company, or any collective organization (the analogy with water would be the water stakeholders), the emphasis is on harmonizing the values of the diverse employees into a common ‘corporate culture’ that everyone understands and can accept. The values are

typically documented in the form of a code of ethics, which reminds the employees about their responsibility to act according to the corporate values and with personal integrity. Ethical behavior can then be defined as adherence to the company's code of ethics (Craft 2013).

Within the water sector, codes of ethics have become an important tool for promoting 'integrity', a term defined by the Water Integrity Network¹⁰ as having four dimensions: transparency, accountability, participation and 'integrity' (i.e. non-corruption). While the concept of integrity emphasizes core processes, its meaning can also include water management outcomes such as social justice and sustainable water ecosystems (WIN 2016). Transforming these abstract values into proper ethics requires a process of 'ethical reflection' (Harris 2008). More specific than 'thinking' and more holistic than 'analysis', ethical reflection is the process by which 'the ground or basis for a belief is deliberately sought and its adequacy to support the belief examined' (John Dewey, cited in Harris 2008, p. 385). Ethical reflection can be framed as a form of strategic thinking oriented around outcomes. "[Both] ethical reflection and the strategy process focus peoples' attention on the preparation and justification of future actions by raising the question: What do we want to achieve?" (Behnam & Rasche 2008, p. 80).

Closely related to the notion of ethical reflection is 'moral imagination' (Werhane & Moriarty 2009, pp. 2–3) which introduces an active, creative dimension to the reflection process:

Moral imagination includes an awareness of the various dimensions embedded in a particular situation – in particular, the moral and ethical ones. It entails the ability to understand one's situation from a number of perspectives. Moral imagination enables managers to recognize a set of options that may not be obvious from within the overarching organizational framework. Moral imagination is the ability to discover and evaluate possibilities within a particular set of circumstances by questioning and expanding one's operative mental framework.

2. Approaches to water ethics

In this section we consider two types of approaches to establish water ethics standards. One is the formulation of comprehensive normative prescriptions that are considered to be universally applicable, while at the same time acknowledging the possibility of some regional or cultural differences. The emphasis is on what can be considered universally true. The other type of approach focuses on specific value principles such as environmental values or social justice. These narrow systems of value frameworks are also intended to be universally applicable.

2.1 Comprehensive Prescriptive Frameworks

2.1.1 UNESCO's Approach

¹⁰ <https://www.waterintegritynetwork.net>

The 1998-2004 UNESCO-COMEST initiative on "Water and Ethics" identified a number of fundamental ethical principles (Brelet and Selborne 2004, pp 5-6) which have been incorporated unchanged in subsequent UNESCO statements including the 2011 report on *Water Ethics and Water Resource Management* (Liu et al 2011) and the 2018 report on *Water Ethics: Ocean, Freshwater, Coastal Areas* (COMEST 2018). These principles are the following (taken from Liu et al 2011, p. 17):

Human dignity: for there is no life without water and those to whom it is denied are denied life;

Participation: for all individuals, especially the poor, must be involved in water planning and management with gender and poverty issues recognized in fostering this process;

Solidarity: for upstream and downstream interdependence within a watershed continually poses challenges for water management resulting in the need for an integrated water management approach;

Human equality: for all persons ought to be provided with the basic necessities of life on an equitable basis;

Common Good: for water is a common good, and without proper water management human potential and dignity diminishes;

Stewardship: for protection and careful use of water resources is needed for intergenerational and intra-generational equity and promotes the sustainable use of life-enabling ecosystems;

Transparency and universal access to information: for if data is not accessible in a form that can be understood, an opportunity will arise for an interested party to disadvantage others;

Inclusiveness: water management policies must address the interests of all who live in a water catchment area. Minority interests must be protected as well as those of the poor and other disadvantaged sectors. In the past few years the concept of Integrated Water Management (IWRM) has come to the fore and the means to ensure equitable, economically sound and environmentally sustainable management of water resources;

Empowerment: for the requirement to facilitate participation in planning and management means much more than to allow an opportunity for consultation. Best ethical practice will enable stakeholders to influence management."

These principles are derived mostly from the UN Universal Declaration of Human Rights (UN 1948) and the proclamation of the 1977 UN Water Conference which "formulated an international consensus on a number of policy and operational measures" including that, "all peoples ... have the right to have access to drinking water in quantities and of a quality equal to their basic needs" (Fallenmark 1977). In describing the intent of the UNESCO-COMEST initiative on Water and Ethics, Selborne (2000, p. 3) states that, "The aim is to help lay a foundation of trust, justice and equity in the availability of and access to freshwater resources for the entire community of nations." These ethical principles, in other words, are intended as universally applicable and not subject to reinterpretation by special interests such as political parties or corporate lobbyists.

How then, should we treat the rise of extractivist values promoted by the current political regimes in the United States, Russia, and Brazil, supported by extractivist corporate and investor interests? As noted above, the ethic (or anti-ethic) of "extractivism" has long been applied in the United States to justify particular exceptions to normal practice, such as uranium mining Sacrifice Zones for weapons productions during the Cold War era, and environmental exemptions accorded to the coal and oil & gas industries in the name of economic growth. This type of "regulatory capture" whereby military or corporate interests exert influence over water-related regulations has expanded into "policy capture" whereby wholesale national policies are rewritten to meet the interests of corporations and investors, supplanting the traditional functions of governments. Examples of extractivist water policies are the rewriting of the US Clean Water Act to substantially weaken its scope and standards (Bloomberg Editorial Board 2018), and plans of the Bolsonaro regime in Brazil to fast-track hydroelectric dams in the Amazon (Rocha 2019). The moral justification offered in both the US and Brazil cases is presented in terms of a binary choice between economic security vs. environmental security. In this sense the ethic of extractivism represents an "anti-ethic", a reaction against the body of ethics that is aligned with principles of environmental sustainability, and cultural and intergenerational justice.

2.1.2 Indigenous Water Ethics

The search for a comprehensive set of universal ethical principles about water has not been limited to the UNESCO-COMEST lineage that has descended from the Human Rights discourse. A parallel track has been developed through meetings and statements of Indigenous Peoples organizations and initiatives of Indigenous leaders. The Indigenous Peoples Kyoto Water Declaration is perhaps the best known. The declaration was drafted by the Indigenous participants at the third World Water Forum held in Kyoto in 2003. The Kyoto Declaration was initially communicated to the World Water Forum in a march through the conference center with the indigenous participants speaking the declaration in unison, followed by a press conference. Later the declaration was posted on various websites and is also included in the UNESCO publication, *Water and Indigenous Peoples* (Chibba et al. 2006).

Two sections of the Indigenous Declaration outline a set of universal ethics for water governance (though without using the ethics terminology). The first section, titled, "Relationship to Water" explains why Indigenous Peoples feel a responsibility to protect water ecosystems. Another section is labeled "Right to Water and Self Determination" and describes the rights and responsibilities of Indigenous Peoples to protect their cultural ways of life:

Relationship to Water

- We, the Indigenous Peoples from all parts of the world assembled here, reaffirm our relationship to Mother Earth and responsibility to future generations to raise our voices in solidarity to speak for the protection of water. We were placed in a sacred manner on this earth, each in our own sacred and traditional lands and territories to care for all of creation and to care for water.

- We recognize, honor and respect water as sacred and sustains all life. Our traditional knowledge, laws and ways of life teach us to be responsible in caring for this sacred gift that connects all life.
- Our relationship with our lands, territories and water is the fundamental physical cultural and spiritual basis for our existence. This relationship to our Mother Earth requires us to conserve our freshwaters and oceans for the survival of present and future generations. We assert our role as caretakers with rights and responsibilities to defend and ensure the protection, availability and purity of water. We stand united to follow and implement our knowledge and traditional laws and exercise our right of self-determination to preserve water, and to preserve life. ...

Right to Water and Self Determination

- We Indigenous Peoples have the right to self-determination. By virtue of that right we have the right to freely exercise full authority and control of our natural resources including water. We also refer to our right of permanent sovereignty over our natural resources, including water.
- Self-determination for Indigenous Peoples includes the right to control our institutions, territories, resources, social orders, and cultures without external domination or interference.
- Self-determination includes the practice of our cultural and spiritual relationships with water, and the exercise of authority to govern, use, manage, regulate, recover, conserve, enhance and renew our water sources, without interference.
- International law recognizes the rights of Indigenous Peoples to:
 - Self-determination
 - Ownership, control and management of our traditional territories, lands and natural resources
 - Exercise our customary law
 - Represent ourselves through our own institutions
 - Require free prior and informed consent to developments on our land
 - Control and share in the benefits of the use of, our traditional knowledge.

2.1.3 Global Water Ethics Charter

The idea of formulating a global charter on water ethics was a recommendation from the 6th World Water Forum held in Marseille, France in 2012. The concept emerged from the ad hoc "Working Group on Ethics, Culture and Spiritualities" which organized a session to identify commonly shared value principles across religious, cultural, and philosophical traditions. The group noted that even well known ethical principles about water, environment, and social justice, whether derived from major religions, Indigenous cultures, or secular philosophy have had little influence on actual water policies. What was needed was the "recognition of spiritual and ethical values and principles and their consideration in decision-making process in the water sector" (IFC Secretariat 2012). By the following year (2013) a core group of three organizations -- French Water Academy, UNESCO's Division of Water Sciences, and Water-Culture Institute (based in Santa Fe, New Mexico) -- agreed to work together to develop a "Water Ethics Charter". Along with this core team, six other organizations and individuals joined the Steering Committee to get the process underway:

Alliance for Water Stewardship, Botin Foundation, Club of Rome, Indigenous Environmental Network, Water Youth Network, and an individual expert, Amb. Magdy Hefny from Egypt.

In 2014, some two years after the Marseille Water Forum, the Steering Committee met at UNESCO-Paris to establish the broad framework for a water ethics charter and agree on aims and expectations. The development of a charter document was seen as the leading edge of an integrated set of outreach and awareness-raising activities to promote the application of ethical principles in water policies and decision-making. The process of developing the content of the charter relied on a list of about 80 experts compiled from the personal contacts of the Steering Committee members. These experts were sent a provisional outline of the intended Charter (Draft 1.0) with an invitation to provide feedback about issues the charter should address and any other guidance. Some thirty experts submitted substantive comments which were then compiled into a spread sheet and incorporated into a new version (Draft 2.0) as the first comprehensive draft of the charter. This draft was presented at the 2015 World Water Forum in Daegu, South Korea (World Water Council 2015:49). Though the intention had been to hold a series of regional consultations to further develop the Charter, funding constraints have precluded further progress. Draft 2.0 of the Water Ethics Charter is publicly available on the website of the Water Ethics Network¹¹ and has served to stimulate scholarly interest, if not yet practical implementation in policies on-the-ground initiatives. The 2016 meeting of the International Society for Environmental Ethics (ISEE) in Kiel, Germany, devoted a series of sessions to presentations about the Charter, which were compiled into an edited volume, *Global Water Ethics: Towards a Global Ethics Charter* (Ziegler and Groenfeldt 2017). A summary version of the Water Ethics Charter is given below:

Water Ethics Charter (Draft 2.0)

Part 1. Introduction

This Charter establishes the moral and ethical foundations to guide decision-making around the use of water and the protection of water resources and water-reliant ecosystems. The following General Principles should guide decision-making: (1) Precautionary Principle, (2) Water as a commons, and (3) Intergenerational Justice.

Part 2. Environmental Issues

We need an environmental ethic which will safeguard the integrity of water ecosystems in the face of unprecedented human pressures and climate change. General Concepts: Water ecosystems have inherent rights, and intrinsic value. Operational Principles: (1) maintain or improve the health of natural water ecosystems; (2) no net loss from current conditions.

Part 3. Economic Issues

Water has an inherent economic dimension, but transcends monetary value. General Concepts: Water use should be reasonable and frugal, emphasizing reuse; Existing water stocks should be maintained; private ownership of water must be balanced with accountability to the larger society. Operational Principles: Water for

¹¹ <https://waterethics.org/the-water-ethics-charter/>

basic human needs should be effectively free, whereas water used in economic activities should have a market cost.

Part 4. Social Principles

General Concepts: Water should be explicitly recognized as a commons and central feature of life for individuals and the larger society. Everyone has a right to safe water and a healthy environment.

Operational Principles: Promote universal access to safe water and sanitation; ensure water justice for all and especially future generations.

Part 5. Cultural and Spiritual Principles

Water and water ecosystems provide important cultural and spiritual meaning
General Concepts: Rights of indigenous and traditional peoples to live according to their cultural traditions including economic livelihood strategies and religious ceremonies.

Operational Principles. Water infrastructure should accommodate customary cultural uses as a matter of priority and subject to “free prior and informed consent”.

Part 6. Water Governance

General Concepts: Incorporate whole watersheds; reflect the interests of all stakeholders; manage at the lowest practical level; priority to social and environmental responsibilities.

Operational Principles: Transparency, accountability, and stakeholder participation are central to good water governance.

2.2 Value-Specific Ethical Prescriptions

Since water is so important to so many sectors of life and economy, a number of normative frameworks have been developed for specific sectors. For example, the OECD undertook a 4-year initiative to develop a set of 12 principles on water governance (OECD 2015), the International Water Association has developed 17 principles for water-wise cities,¹² and 29 charitable organizations involved in Water and Sanitation for Health (WASH) programs in developing countries compiled the WASH Sustainability Charter¹³ to promote best practices. Two initiatives which have an explicit values emphasis are the Environmental Flow Standards originally formulated at a 2007 conference in Brisbane, Australia and recently updated, and the Blue Communities Project which invokes the principle of water as a commons to promote public access to safe and affordable water.

2.2.1 Environmental Flow Standards

An environmental flow is the natural water regime of a river, wetland, or coastal zone which maintains the ecosystem (Postel and Richter 2003; Poff and Matthews 2013). A minimum

¹² http://www.iwa-network.org/projects/water-wise-cities/#the_17_iwa_principles_for_water-wise_cities

¹³ <https://washcharter.wordpress.com>

environmental flow is the smallest amount of water required at any given time to allow the ecosystem to function (Petts 2009). There are both economic and ethical reasons for maintaining environmental flows. From an economic perspective, “Environmental flows provide critical contributions to both river health and ultimately to economic development, ensuring the continued availability of the many benefits that healthy river and groundwater systems bring to society” (Dyson et al. 2003). From an ethical perspective, rivers have intrinsic rights to exist, and we have an intrinsic responsibility to respect those rights (Boyd 2017).

Since the 1990s, the concept of environmental flows has been gradually incorporated into water laws from Europe to South Africa to Australia. The South African National Water Act, adopted in 1998, established a reserve consisting of an unallocated portion of water that is not subject to competition with other water uses. It refers to both quality and quantity of water and has two segments: the basic human need reserve and the ecological reserve. The former refers to the amount of water needed for drinking, cooking, and personal hygiene, and the latter refers to the amount of water required to protect the aquatic ecosystem.

In Europe, the Water Framework Directive, enacted in 2001, required that European rivers and groundwater attain “good ecological status.” The Directive does not require any particular flow levels, but instead defines ecological status in terms of biological communities, water quality, and channel morphology. In order to meet healthy standards, rivers need a certain flow quantity and flow regime. The details are different for each river, hence the practical wisdom in setting outcome indicators of ecological status, rather than stipulating the flow inputs (Acreman and Ferguson 2010). In Australia environmental flow policies were introduced during the 1990s along with new institutional arrangements to hold and manage environmental water allocations, including programs to buy back water entitlements from water users and return the water to the environment (Le Quesne et al. 2010: 47–8).

Normative standards for environmental flow were endorsed by participants at the 2007 Brisbane River Symposium as the Brisbane Declaration. This was the first consensus document on what the term should convey, and marks a turning point for elevating environmental flow to the status of a global standard that has become generally accepted (Arthington et al. 2018). A ten-year review of the Declaration at the 2017 Brisbane River Symposium reaffirmed the original principles, and added new statements about the importance of cultural heritage and “local knowledge and customary water management practices [which] can strengthen environmental flow planning, implementation, and sustainable outcomes” (Arthington et al. 2018: 11). Key elements from the 2007 Brisbane Declaration on Environmental Flows include the following:¹⁴

Freshwater ecosystems are the foundation of our social, cultural, and economic well-being. Healthy freshwater ecosystems – rivers, lakes, floodplains, wetlands, and estuaries – provide clean water, food, fiber, energy and many other benefits that

¹⁴ The full text is available on the website of the International River Foundation, <http://riverfoundation.org.au/wp-content/uploads/2017/02/THE-BRISBANE-DECLARATION.pdf>

support economies and livelihoods around the world. They are essential to human health and well-being.

Freshwater ecosystems are seriously impaired and continue to degrade at alarming rates. Aquatic species are declining more rapidly than terrestrial and marine species. As freshwater ecosystems degrade, human communities lose important social, cultural, and economic benefits; estuaries lose productivity; invasive plants and animals flourish; and the natural resilience of rivers, lakes, wetlands, and estuaries weakens. The severe cumulative impact is global in scope.

Water flowing to the sea is not wasted. Fresh water that flows into the ocean nourishes estuaries, which provide abundant food supplies, buffer infrastructure against storms and tidal surges, and dilute and evacuate pollutants.

Flow alteration imperils freshwater and estuarine ecosystems. These ecosystems have evolved with, and depend upon, naturally variable flows of high-quality fresh water. Greater attention to environmental flow needs must be exercised when attempting to manage floods; supply water to cities, farms, and industries; generate power; and facilitate navigation, recreation, and drainage.

Environmental flow management provides the water flows needed to sustain freshwater and estuarine ecosystems in coexistence with agriculture, industry, and cities. The goal of environmental flow management is to restore and maintain the socially valued benefits of healthy, resilient freshwater ecosystems through participatory decision making informed by sound science. Ground-water and floodplain management are integral to environmental flow management.

Climate change intensifies the urgency. Sound environmental flow management hedges against potentially serious and irreversible damage to freshwater ecosystems from climate change impacts by maintaining and enhancing ecosystem resiliency.

The related concept of *cultural flows* was also developed in Australia and refers to "water entitlements that are legally and beneficially owned by Indigenous Nations of a sufficient and adequate quantity and quality, to improve the spiritual, cultural, environmental, social and economic conditions of those Indigenous Nations."¹⁵ Cultural flow can also refer to that portion of an environmental flow which accommodates a particular cultural practice that depends on certain flows, for example, to attract wildlife into the riparian forest, or to induce a certain species of fish to enter a floodplain pool. Adjusting the flow (volume and timing) of regulated rivers can often support locally important cultural practices. The meaning of the term "cultural flows" continues to evolve (Taylor et al. 2016) and can facilitate integration of the diverse cultural values of water (recreation, psychological wellbeing, aesthetic enjoyment, cultural heritage) into the water planning process.

2.2.2 Governance ethics: Blue Communities

¹⁵ This definition is taken from the 2010 Echuca Declaration, which can be found at <http://culturalflows.com.au>.

The Blue Communities Project¹⁶ promotes the ethical principle of water as a commons and a public trust (Blue Communities Project 2016). An alliance between the Council of Canadians and the Canadian Union of Public Employees (CUPE), the Project encourages municipalities, organizations (e.g., universities) and First Nations communities both in Canada and world-wide, to take a pledge about water. The pledge, which is made through one or more formal resolutions or statements by the community's governing body, has three elements:

1. Recognizing water and sanitation as human rights,
2. Banning or phasing out the sale of bottled water in municipal facilities and at municipal events, and
3. Promoting publicly financed, owned, and operated water and wastewater services.

These three conditions are mandatory, but the details of how they are fulfilled can be flexible, in order to be able to adapt to different local circumstances. As of 2018, over 20 cities in Canada, one in the United States (Northampton, Massachusetts) and a number of cities in Europe (including St. Gallen and Bern in Switzerland, Paris in France, Thessaloniki in Greece, and Berlin in Germany) have joined the Blue Communities (Ozbay 2018). In addition to municipalities, the designation of "Blue Community" has also been awarded to several universities, the World Council of Churches, and (so far) one Indigenous community, the Tsal'almec First Nation in British Columbia.

The Blue Communities initiative is a continuation of a 20 year campaign against austerity policies and the commercialization of water, centered around the work of Maude Barlow and the Council of Canadians (Barlow and Clarke 2002, Barlow 2013). They started the Blue Communities initiative "so that municipalities could take a proactive position regarding their responsibility to water services. A Blue Community treats water as a common good to be shared by everyone and as the responsibility of all. Because water is central to life, it must be governed by principles that are based on sustainability and justice in order to preserve water for nature and future generations" (Barlow 2016).

3. Applying Water Ethics

How can the normative frameworks for making best ethical use of water be applied in real settings? This is a complicated issue, but it is helpful to bear in mind that tacit normative frameworks embedded in conventional water policies are being implemented routinely. Innovation is the exception and not the rule. The motivation for taking risks in trying out new policies, which is ultimately what this chapter is advocating, stems from the inadequate performance of conventional policies founded upon conventional normative frameworks about how best to govern water. If we don't want to repeat the mistakes of the past, we will need to try something else.

¹⁶ <https://canadians.org/bluecommunities>

The field of Water Ethics suggests that by reflecting on our values about water as an integral aspect of our agenda setting -- a "Look before you leap" type of assessment -- we are likely to make better decisions. One central reason for expecting better decisions to emerge from attention to ethics is that careful reflection on our values and on the interaction of those values, will almost inevitably lead us to greater awareness of the likely multiplier effects and potential synergies as well as tradeoffs implicit in alternative choices. By orchestrating the interactive effects of alternative scenarios, we can approximate the work of modelers who want to see into the future what the pros and cons of various decisions are likely to be. Generally speaking, the best solutions will have multifunctional benefit streams. The literature on multifunctionality would suggest that contributing to multiple SDGs is likely to be more impactful than aiming very narrowly at one particular type of outcome (Netherlands Enterprise Agency 2016).

The three cases of applied water ethics discussed in this section share the common feature of contributing a wide range of benefits from the water that is used. The first example, Agroecology, might use water delivered by irrigation canals or wells, or might rely on natural precipitation, but one way or another, water is a necessary input. Farmers practicing agroecology produce not only food, but through soil management they sequester carbon, and through the mix of crops grown together, there is steady demand for local labor throughout the growing season, creating local jobs. There are also cultural benefits from growing traditional foods and reinforcing the sacred connection with the land, as well as community empowerment through the cooperation of local farmers. The second example of applied water ethics is the trend of re-municipalizing city water systems that had been sold to private companies, a common trend in the 1990s. Local citizens become more empowered when they control their water system, albeit indirectly through the municipal government. The third example is that of corporate water stewardship, exemplified most dramatically by the Swedish Textile Water Initiative, and illustrating that private companies can be ethical with respect to water, while still making a profit.

3.1. Agroecology: Towards an ethical agriculture

Agroecology, an approach based on both ecological and social principles, is finally coming of age as a solution to the multiple challenges of climate change, sustainability, and social justice. Though the approach was formalized in the 1970s (Altieri 1985) as a counterpoint to conventional agriculture, it remained marginalized by vested interests committed to the high-input, industrial mode of growing food. Proponents of agroecology saw themselves as participants in a cultural transformation to bring society and nature back into alignment (Pretty 2002; de Schutter 2011). Today agroecology is in vogue, thanks to a revaluing of its multiple benefits. "The FAO has an agroecology office at its headquarters in Rome, agriculture ministers from around the world are drafting public policy on 'agroecology,' and universities are scrambling to offer agroecology curricula and initiate new research programs" (Rosset and Altieri 2017).

In his keynote address to the International Symposium on Agroecology in April 2018, FAO Director-General José Graziano da Silva noted that, "agroecology transcends the farm, and

provides many economic, social and environmental co-benefits.”¹⁷ He was joined in opening the Symposium by French Member of Parliament and former Minister of Agriculture, Stéphane Le Foll,¹⁸ who was instrumental in placing agroecology as the centerpiece of France’s national agricultural policy. The significance of the French government promoting agroecology as main-stream policy is the demonstration that it is not a policy for developing countries only but for technologically advanced countries as well.

The aim of national agriculture sectors is not limited only to producing food (though that remains important) but to contribute to more broadly to the UN Sustainable Development Goals (SDGs) and the goal of "living well". Agroecology will not necessarily produce more food than intensive industrial styles of farming, but the aggregate benefits of local employment, ecosystem resilience, carbon sequestration, public health (from nutritious foods grown without toxic chemical additives), cultural identity, and greater stakeholder involvement in agricultural decision-making support multiple SDGs (Casey 2016, Bruil et al 2019). Through its Scaling up Agroecology Initiative, FAO is advancing “a vision to bring agroecology to scale and transform food and agricultural systems to achieve the SDGs” (FAO 2018: 1). Complementary initiatives are also being pursued by the International Fund for Agricultural Development (IFAD) and the Intergovernmental science-policy Platform on Biodiversity and Ecosystem Services (IBPES).

3.2. Re-municipalization as a Water Ethic

The story of Cochabamba’s unhappy experience with water privatization has entered the water governance history books as a clear failure for privatization, and a clear win for the people (e.g., see the account by Barlow and Clarke 2002). The underlying story is the clash of values and ethics. The municipal government of Cochabamba had adopted the World Bank ideological view of privatization as a way to improve water governance by unleashing the power of the private sector. From a business perspective, that might have made sense, but from a social perspective, it was disastrous, causing extreme economic and physical hardship to the poor. The people protested and the foreign company that had taken over control of the city's water (through a legally binding contract with the city government, and financing from the World Bank) was forced to withdraw. The municipal government took back control over the water system; the people had won!

The World Bank's promotion of the private sector in Cochabamba might have stemmed from good intentions for expanding water access for the poor, or it might have reflected the interests of donor countries to send more business to their compatriots (Bakker 2010). There is a fairly strong consensus, however, that the policies favoring private takeovers of large urban water systems were very much overdone by the World Bank and the regional international development banks in the 1990s. Indeed, the pendulum has been swinging away from urban water privatization to urban water re-municipalization (Lobina 2017).

¹⁷ Opening Remarks at the Second International Symposium on Agroecology: Scaling up Agroecology to Achieve the SDGs. [Webcast, minutes 7:35-7:45]: www.fao.org/webcast/home/en/item/4642/icode/

¹⁸ Agroecology in France: Changing production models to combine economic and environmental performance: agriculture.gouv.fr/telecharger/58144?token=84c0ffff0ca_f34ea89f434e9745865a2

Inspired by the example of Cochabamba, the citizens of Berlin voted in 2013 to buy back the city water utility which had been privatized by a previous city administration in the 1990s (Härlin 2017). As the new owners of the city's water utility, the citizens embarked on a community-wide planning initiative to devise a Berlin Water Charter¹⁹ stipulating key value principles that would guide the new era of citizen-led water governance.

The case of Berlin is one of the more dramatic water governance reforms, but it is not unique. The city of Paris took back its water utility in 2010 simply by not renewing the long-standing contract with Veolia and Suez, and creating a new public entity, Eau de Paris (Le Strat 2010). Since then, the global trend to re-municipalization has become unmistakable, though not uniform. The Berlin Water Charter illustrates why public management of urban water supplies is clearly desirable if public sector governance capacity is strong. Public water service provides important opportunities to engage stakeholders and empower them to forge a relationship to the water they depend upon every day. The Berlin Water Charter was formulated through consultations organized by the Berliner Wassertisch (Berlin Water Table), the same group that had led the campaign to remunicipalize the water system. The question they felt needed to be addressed was how would water management under public control be different? What values did they wish to address?

The dominant theme of the Berlin Water Charter is the principle of water as a commons for all people, present and future. This is not a comprehensive framework of water ethics writ large with all values systematically addressed; rather, it highlights key principles which will guide the new public water managers. Here is a summary of the 4-page charter:

1 General Principles

- Access to water is a human right
- Water must be affordable for all
- The water utility shall be a public corporation with no privatisation
- Governance will be transparent with close coordination of stakeholders

2 Social and Economic Principles

- water charges will be for actual costs, but not for profit
- Pricing model will take burden away from small consumers
- No private companies may be integrated into the water utility
- Drinking water quality must be maintained with no degradation

3 Environmental Principles

- Drinking water sources will be local groundwater and Spree and Havel Rivers
- Natural environment of drinking water sources will be maintained in good status;
- Organic agriculture is encouraged to reduce water pollution
- Surface waters and water protection areas will be developed in harmony with nature;
- Fracking and oil/gas extraction is banned in and around Berlin

4 Legal Principles

¹⁹ See the website of the "Berlin Water Table" (<https://berliner-wassertisch.net/>), or download the English text of the Berlin Water Charter at https://berliner-wassertisch.net/assets/Charta/Berlin_Water_Charter2015.pdf.

- This Water Charter is the basis for interpreting existing or new laws or provisions.

(Source: Berliner Wassertisch 2015)

McDonald (2018:50) identifies three recurring value positions among advocates for remunicipalization: “Expand democratic control, improve equity, [and] improve environmental sustainability.” Privatization advocates, on the other hand, favor values which “improve water service performance and reliability, reduce costs to the state [and] ensure market-friendly practices in water.” An ethics perspective contributes to the discussion of public vs. private governance of urban water supply and sanitation through clarifying the governance goals. What are the value objectives beyond cost savings? Is there a goal to expand service to poor neighborhoods? Is there a corresponding ethic that water connections will not be turned off for lack of payment? Is there also a social and governance goal of community development and capacity-building through stakeholder engagement in water planning and management?

3.3. Corporate Water Ethics

The business sector has embraced the concept of "water stewardship" in developing water strategies that serve two overlapping objectives: (1) contributing towards sustainability goals, and (2) managing water risk (Sym 2017). The most direct and immediate way that companies can manage their water risk is to decrease their demand by lowering their water footprint. A factory's water footprint refers to net water use, after subtracting water that is reused, recycled, or reclaimed during or after the manufacturing process (Hoekstra et al. 2011; Hoekstra 2013, 2015). A smaller water footprint implies higher water productivity (economic water ethic) with less water removed from nature (environmental water ethic). Society is better off because there is more water that can be used for other purposes.

By investing time and resources into finding ways to use less water to produce the same products, and to return good quality water back to the environment, manufacturing industries are acting “responsibly” and ethically. In the case of older factories designed without careful attention to water wastage, financial returns to water conservation investments can be dramatic. An initiative to reduce water use in 35 textile factories (for weaving and dyeing) near Delhi, India, implemented 85 “low- hanging fruit” recommendations based on water audits. The results were staggering: Over a single year, the return on investment was 765 percent, with an average payback time of 11 days per project (SIWI 2014).

Companies can also engage in water stewardship outside their factory fence by reducing their impact on local water ecosystems, or proactively helping other users (municipalities, farmers or even other companies) to reduce their water impacts. The business motivation, of course, is not only protecting the physical water in the basin, but earning the acceptance (social license) of the neighbors. The operative ethical principle that legitimizes the company's social license is the widely held view of water as a commons (Wagner 2012) regardless of legal ownership.

In addition to practicing water stewardship inside the factory fence, and outside that fence within a shared water basin, companies can also engage in shaping water policies and regulations. Corporate efforts to influence water policies typically focus on seeking exemptions to environmental standards; for example, coal companies in the United States have waged a protracted political battle against oversight by the Environmental Protection Agency, and the efforts of the oil and gas industry to spread disinformation about climate change is notorious (Grasso 2019). In theory, however, for-profit companies could also be lobbying on behalf of sustainability ethics. Water stewardship within the textile industry is addressed all three levels within the factories, at the river basin level, and at the policy level.

3.3.1 Swedish Textile Water Initiative

The Swedish Textile Water Initiative (STWI) is a network of Swedish fashion brands working cooperatively to help their suppliers in India, Bangladesh, China, Turkey, and Ethiopia to adopt water-conserving measures. STWI grew out of the concern of one family-owned company, Indiska, to help its suppliers in India to treat the wastewater resulting from printing and dyeing cotton and silk textiles, which is a major source of water pollution. With technical support from Stockholm International Water Institute, the initiative developed into the current network of 29 brands and 277 suppliers. The aim is no longer just improving the water footprint of the textile manufacturers in the supply chains, but transforming water use within the whole fashion industry. "The STWI guidelines are being promoted by brands that believe in acting responsibly and want to do so through suppliers that they have a direct relationship with" (STWI 2014:8). Though some very large companies (Ikea, H&M) are members, the policy clout of the initiative seems to owe its success to the network itself, more than to the individual companies.

3.3.2 Detoxing Fashion

Another initiative focusing on water ethics in the fashion industry is the Greenpeace "Detox" campaign.²⁰ In a hard-hitting expose of chemical pollutants linked to clothing production of some well-known brands, Greenpeace highlighted the fashion/textile industry as the number two pollution culprit, after the oil industry (Greenpeace 2018). The opening salvo of the campaign was a 2011 report focusing on China, *Dirty Laundry: Unravelling the Corporate Connections to Toxic Water Pollution in China*, which was quickly followed by another report, *Dirty Laundry 2 - Hung up to Dry*, painting a broader, global picture of systemic carelessness within the fashion industry (Grappi et al. 2017).

From an ethics perspective, the most important feature of the Fashion Detox campaign was brushing over the issue of legal compliance of national pollution regulations and aiming the message of accountability squarely on the textile companies themselves to clean up their industry. Legal compliance means little when many of the most harmful chemicals are not regulated. Greenpeace compiled its own "Do Not Use" list of chemicals based on recognized authorities such as the Stockholm Convention on Persistent Organic Pollutants²¹ and the EU Water Framework Directive list of priority hazardous substances (NMA 2013).

²⁰ <https://www.greenpeace.org/international/act/detox/>

²¹ <http://chm.pops.int>

The Greenpeace strategy of bluster and drama fit the culture of the fashion industry perfectly, and to the credit of some of the major brands that were attacked, the industry listened. Rather than trying to defend their past behaviors, major brands responded with specific plans for complying with much of what Greenpeace was asking for (Grappi et al. 2017). The science was sound, and the marketing intelligence was clear: Consumers were concerned, not only for their own health, but for the health of the planet. Here we see a perfect storm of applied ethics. The disruptive force of the Greenpeace campaign energized the latent ethical principles of both customers and companies.

4. Status and Prospects for a Field of Water Ethics

There are two reasons to be optimistic about the prospects for a robust and recognized field of water ethics. One reason is that there is already consensus on a broad set of water values thanks largely to the legacy of Integrated Water Resources Management (IWRM). The "big tent" established by the concept of IWRM, which gave recognition to diverse values among water users, has encouraged broad participation of diverse stakeholders. This diversity is on display at the triennial World Water Forums which attract many thousands of participants. But the cracks in the IWRM paradigm are also evident at these water forums, in the guise of "Alternative Water Forums" organized by the NGO sector to provide an opportunity for grassroots groups to discuss the dark sides of the water sector: Dams that destroy river ecosystems and flood the ancestral territories of Indigenous communities; toxic mine spills that kill the fish that local communities depend upon.

Can water ethics become an antidote to the inequities and injustices of the real water world? There is a fairly strong consensus about the water values we should aspire towards. In this section we consider five key water values that are widely shared among the global water community. These provide a basis for hope, but how can consensus about water values be leveraged into ethical behavior that can counteract the powerful forces of illegal corruption and legal extractivism? How can water ethics be activated and enacted? Strengthening the field of water ethics would provide new opportunities for developing theories and methods and enhance the contribution of water ethics to the challenges of water in the Anthropocene.

4.1. The Global Consensus on Water Values

By distilling the values implicit in global and regional water statements made during the three decades since the 1992 Dublin Principles, we can distinguish five key value propositions representing a remarkable cross-cultural consensus: (1) nature needs to be kept alive (ecological function); (2) everyone has a right to water and sanitation (social justice); (3) water should be used responsibly in agriculture and industries (responsible use); (4) stakeholders should be involved in decision-making (participation), and (5) diverse cultural identities and understandings about water should be respected. These five principles constitute a conceptual foundation for envisioning and formalizing a shared water ethic.

1. Environmental values: Keep nature alive. The notion that restoring natural ecological functions is desirable is a central tenet of IWRM which assumes that ecosystem services have value, and healthier ecosystems generally have more of those values than unhealthy ones. Healthy water ecosystems are fundamental to water security and resilience (UNEP 2009), and whether or not we accord nature the right to exist (Boyd 2017) the practical implication could be the same either way: It is in the interest of humans that nature (and especially water ecosystems) be alive and healthy.

2. Social values: The human right to water and sanitation. Since access to drinking water is a matter of life or death, and sanitation is needed to protect the safety of water supplies, the logic behind the UN General Assembly's 2010 vote to accord access of safe water and sanitation the status of a human right seems unassailable. It is up to individual countries, of course, to implement this right. The infamous case of contaminated water supplies for the city of Flint, Michigan, stands as a reminder that, even in developed countries like the United States, the human right to water cannot be taken for granted (Rothstein 2016).

3. Economic values: Responsible use. The intuitive concept of using water carefully was given an economic interpretation in the Dublin Statement (1992) that, "Water has an economic value in all its competing uses and should be recognized as an economic good,". The more recently popularized concept of "One Water" (Kirshen et al. 2018) reminds us that not only water, but also water values, are connected. The violation of social ethics in Flint had a huge economic impact, while the lead that poisoned the tap water also became an environmental problem as the lead contaminated wastewater was released into nature.

4. Governance values: Participatory water governance. The principle "that decisions are taken at the lowest appropriate level, with full public consultation and involvement of users in the planning and implementation of water projects" (Dublin Principles 1992) is a central feature of IWRM. Participation is also central to promoting financial and professional integrity (anti-corruption), transparency and accountability within the water governance system (WIN 2016). And though the interests of Indigenous Peoples and the natural environment were seldom cited in early IWRM discussions of participation, both are generally (but not always) included in contemporary lists of stakeholders. This is an example of the "social learning" taking place within the IWRM approach (Pahl-Wostl et al. 2007). Indigenous Peoples' interests have been energized through the concept of free, prior and informed consent (FPIC) embedded within the 2007 Declaration on the Rights of Indigenous Peoples (United Nations 2008). The participation of Nature can sometimes be accomplished through the concept of legal personhood for rivers such as the Whan-ganui River in New Zealand (O'Donnell and Talbot-Jones 2018).

5. Respect the diversity of water culture. National governments usually deem rivers as economic resources but Indigenous communities, such as the Standing Rock Sioux Nation in South Dakota (United States) regard their rivers, such as the Missouri, as foundational to their spiritual and cultural identity as a people. The question is not whose ontology will win and whose will lose; that question was answered in the 19th century with political and military force, confirmed by dam construction on the Missouri River in the 20th century, and further re-affirmed in 2017 with the forcibly imposed construction of the DAPL pipeline through the traditional territories of the Standing Rock Sioux Nation (Whyte 2017). The

question for water ethics now is how can multiple worldviews about society's rightful relationship with nature – and associated values about water – co-exist in a politically amicable way?

4.1.1 Sustainability through Shared Water Values

The task for the field of water ethics is to develop skills and tools for accommodating value diversity. For Indigenous and traditional peoples whose cultures have co-evolved with rivers, lakes, or desert oases, there are particularly compelling issues of cultural sovereignty at stake. It is challenging for traditional cultures to compete for the loyalties of its young people who are increasingly connected to the globalized system of market capitalism, yet it is that same global market-based system that has brought our planet to the brink of climate destruction. Who is to say that Indigenous communities should make way for the economic forces that are threatening our common future? Or to re-phrase the question with a different premise: What can we learn -- from Indigenous cultures, and from our own cultural value traditions of religion, philosophy, humanities, and science -- about forging a sustainable relationship with water?

Globally accepted ethical prescriptions about water can be easily ignored (because there is no enforcement), while local water decisions are accountable to locally held cultural principles and norms, which in turn are influenced by local politics and economic incentives. What is the potential for applying principles of water ethics within this messy context of practical, mostly local water decisions? One scenario could be the following: By forging a fresh set of ethical principles, or simply clarifying the ethics already in place but hidden in the background, local decisions about water can be informed by those ethics. This does not mean that the decisions actually taken will be consistent with those ethics, since power, politics, and greed also exert influences that may be counteractive. But going to the trouble of articulating key ethical principles can enhance the likelihood that those ethics will have some influence on decisions and outcomes.

4.2 Enabling Conditions

Just as a wood stove needs kindling and a match to activate the larger pieces of wood and create a useful fire, there are two enabling conditions that need to be met in order to catalyze the study of water values into a practical form that can be effectively applied to actual water decisions. The first enabling condition is establishing recognizable categories. It's difficult to see the interplay of cultural values and ethics influencing our relationship with water until we establish the basic categories of "water values" and "water ethics". These categories signal that there is something to be gained in exploring the values connected with water, and the value principles ("ethics") by which the values can be organized into a coherent system. But without a concept of "water values" or "water ethics" -- when these exist only as tacit norms that go unrecognized by the policy makers -- communication across cultural and ontological boundaries breaks down and polarization ensues.

This is one explanation, or at least a contributing factor, in making sense of the violent clash between the pipeline company and the Army Corps of Engineers on one side and the Standing Rock Sioux Tribe and their Indigenous and non-Indigenous supporters on the other (Whyte 2017). If the Army Corps had internalized an understanding of and appreciation for the water values of the Tribe, and had internalized the ethic of respecting the very different values held by the Indigenous water protectors, perhaps the confrontation would have turned out differently. But without framing the tribal water protectors values as constituting an ethic that deserves respect, that there is an ethical responsibility for taking a different value system seriously, the message of the water protectors was unable to get through. The words of the water protectors, "Water is life!" could not penetrate the ontological armor of the other side.

The second enabling condition that I believe to be a prerequisite for the useful activation of water values and ethical principles is the establishment of a recognized field of water ethics. The diversity of values and ethical principles need operating space for discussion, analysis, reflection, negotiation, and argument. And how to create that field, that space? It takes a village of Indigenous wisdom-keepers, philosophers, humanists, artists, and others who are experts in values and ethics, but not necessarily in water. And it also takes the input of water experts who are willing to turn their attention to values and ethics. Indeed the nascent field of water ethics that already exists has been shaped more by water experts who have written about ethics, than by ethicists or humanists who have written about water. The advantage of this skewed ratio is that the field of water ethics is already oriented towards practical application.

4.3. Nurturing the Field of Water Ethics

How can the still-emerging field of water ethics develop into a recognizable body of study and become acknowledged as an important and necessary domain of water governance? Simply describing its basic principles and documenting illustrative examples can help to systematize and publicize the field. This is a useful start, but it is clearly not enough. An analogy can be made with the emergence of the field of bioethics in the 1970s. Bioethics was of broad interest to environmental and natural resources management, in addition to medicine and public health. Before 1980 we might well have imagined that departments of bioethics would emerge in liberal arts colleges, rather than medical schools (Thompson 2015). But of course, that did not happen. The field of medicine adopted bioethics with enthusiasm, while the social sciences, humanities and the agricultural sciences as well – largely ignored the ethical dimensions of their various disciplines. Bioethics was embraced by the medical fields as useful and, indeed, essential to a broad range of decisions ranging from treatment protocols to research strategies. Today virtually all medical schools in the US and Europe have dedicated faculty lines in medical bioethics (Thompson 2015: 81), whereas agricultural ethics remains poorly elucidated as a field, and water ethics is almost unheard of.

Why the lack of interest in the ethics of natural resources? In pondering this question with regard to agricultural ethics, Thompson (2015: 82–83) suggests that the broad range and dynamism of the social sciences has taken up the intellectual space where a field of natural

resources ethics might otherwise have taken root. Social justice, human rights, and environmental values have been quite thoroughly addressed by the social and economic sciences. But ethics is most definitely needed to sort through the multiple and often conflicting values that people have about the use of water and our relationship to water ecosystems. The "value added" of ethics is in the approach of ethical reflection to assess the goodness of competing values and value principles.

Within the established water profession there is renewed interest in water values to inform sustainable water governance (Garrick et al 2017). As water sustainability concerns continue to mount the interest in values is likely to increase as well, and there is some reason to anticipate a renewed interest in how ethics can help in sorting through conflicting, overlapping, and sometimes synergistic values (Groenfeldt 2019). The project of building a field of water ethics and the project of defining a new water ethic are very much intertwined. A new water ethic can only take form if there is a field of water ethics to nurture that project, while the field of water ethics cannot be created out of nothing; it needs to grow in response to a demand.

The good news for water ethics is that we are living in the Anthropocene, a high stakes epoch where humanity can ill afford ignoring certain ethical principles, such as precaution and solidarity. Yet as budding water ethicists, we cannot responsibly sit back and wait to be asked for our advice. Part of an ethical response in times of crisis entails stepping up to offer what help we can provide. The field of water ethics will advance most effectively through engagement with the intractable ethical issues of water governance. Just as progressive corporations recognize a dual benefit in promoting basin-level water stewardship (Water risk is reduced while their social license to operate is enhanced), the project of water ethics faces a similar opportunity. By engaging with our water colleagues to help address practical water challenges we can enhance our own intellectual license to operate and advance the field of water ethics.

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