

DRAFT (updated)

Challenges for the Future: Water Resources Management and Potential Nexus of Theological, Ethical and Pastoral Approaches

for

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by

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Abstract

Thinking of pastoral care and water policies may sound farfetched for water managers and civil engineers with whom I spend a professional life – but not so. The ways we discuss water policy decisions often closely mirror broader social and ethical decisions, for example: water as a common good; water and human dignity; water as a facilitator of wellbeing; rights and responsibilities of access to water; justice and water. Water is a symbol of reconciliation, healing and regeneration which appears in virtually all of our known organized faith-based religions.

This papers looks at a few realities framing ethical aspects of water management and suggests areas that water management, faith, and pastoral concern can meet them such as; changing the terms of discourse in world water debates among the rich–poor dialog; changing the terms of discourse in world water debates on rhetoric; sustainable development; precautionary principle; concepts of nature in water decision making; symbolism and conflict; governance and water decisions. It concludes with five suggestions regarding water ethics.

¹ The views expressed by the author are his and reflect his traditions

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Thinking of pastoral care and water policies may sound farfetched for water managers and civil engineers with whom I spend a professional life – but not so. The ways we discuss water policy decisions often closely mirror broader social and ethical decisions, for example: water as a common good; water and human dignity; water as a facilitator of wellbeing; rights and responsibilities of access to water; justice and water. Water is a symbol of reconciliation, healing and regeneration which appears in virtually all of our known organized faith-based religions.

At Stockholm WW 2016 the Water and Faith Panel noted:

“...in areas of the world with the highest levels of water stress, religion often plays a definitive role in the daily lives of community members.....”

Two ethical imperatives animate my remarks: preference for the poor and development (i.e. enhancing social mobility and prosperity) both central to the nexus of water policy decisions and faith. They also are neatly summarized by maxims from two giants of the 20th century; Gandhi “.... poverty is the worst polluter....” and Nobel laureate Amartya Sen “.... development as freedom.” (Ghandi, RIO Environmental conference in 1972, Amartya Sen, Development as Freedom, August 15, 2000)

Water decisions can be at the nexus of ethics, public policies, nature, values, beliefs and rationality. I hope my remarks open windows into this nexus.

1. Some contemporary and Historical Context:

Those who seek to understand the ethical dimension of water policy must confront many tough realities: Here are 4.

First, we must confront the reality that most people live in places where water comes only a few months of the year, sometimes with too little and other times with too much. (34 J. D. Priscoli / Water Policy 14 (2012) 21–40). For example, more than two-thirds of people in Asia live in areas where 80% of their rainfall arrives in 25% of the year. Overall, roughly 70% of water is used for agriculture, 20% for industry and 10% for municipal use. Water is also managed for flood risk reduction, hydroelectric power navigation and more. Humanity is continually realigning these uses to fit changing demographics and levels of development. And they must do it within the new normal of greater uncertainties. Do we move water to people, or people to water? Each has different ethical and political implications. If we move billions of people who are at risk of extreme water events, do we use the same international relocation rules which have blocked large infrastructure projects that may have led to the relocation of hundreds of thousands?

Second, we must deal with the notion that the poor cannot pay. But the truth is that the poor do pay, and pay a far higher percentage of income or wealth and treasure than almost anyone in the richer world would stand for: often even with block tariffs in place. (GWP TEC paper #22) They pay \$1.00–2.50/m³ on average. In the US, the average paid is \$0.30–0.80/m³. In many cases around the world, the poor who are connected often pay \$1.00/m³ and those who

are unconnected can pay \$5.50–16.50/m³. Our challenge is not willingness or ability to pay as much as it is how to align access of resources and capital to the poor. Faith Based Organizations have huge potential to assist such access especially in rural areas. Pricing, markets, transparency, private- public partnerships, allocation fairness, adaptability, serious performance criteria, IWRM all play a role.

Third, little reform or equitable integration of water uses can be achieved without defined entitlements (often called rights). A world debate has emerged on establishing a human right to water. Forty countries have a human right to water in their constitutions/national legislation. More than 95 countries have 95% access and most of these countries do not have such in their constitution/national legislation (World Bank, WHO UN.) There are low water per capita countries with high access to WWS while there are high per capita countries with low access. Entitlements systems ultimately reflect regions, geography, political culture and local norms: making it virtually impossible to quantify a universal water human right. GDP growth seems less linked to such a human right to water and more likely to governance reminding us of Sen's admonitions on development.

Whether or not such a right is immutable and exists or is derivative of other fundamental human rights is unclear. However, it is clear that humans will not increase access to and use of water without some operating system of water entitlements to set stable social expectations. And much of the world lives in situations of arbitrary power delegation of water entitlements/rights.

At the 2008 Zaragoza Water Forum, Pope Benedict said:

'This right to water is founded on the dignity of the Human person; it is necessary...to examine attentively the approach...of those who treat water merely as an economic commodity.... Its use must be rational and solidarity, fruit of a balanced synergy between the public and private sector.' (Pope Benedict, 2008b)

Fourth, how we make decisions about risk and uncertainty in water resources management is central to the health of political culture and individual freedom. We know that managing risk and the uncertainties of the extreme events of floods, tsunamis and droughts is critical to achieving social stability, breaking fatalism, and facilitating growth and social transformation. Rich countries direct water investments manage to keep damages as % of GDP to 5% or less. Poor countries lack means to manage uncertainties/risk and GDP fluctuates with rainfall resulting in damages greater than 40% of GDP. AID often becomes primarily humanitarian helping the poor back to ex ante situations; often simple sustaining subsistence living rather imparting tools to escape this horror.

What can we, as practitioners embolden with a pastoral spirit do?

Let's look to 3 areas:

(1). Changing the terms of discourse in world water debates: the rich–poor dialog

Behavioral research notes that no one can be happy when living in terror and fear for

their livelihoods. In such circumstances, economic social development is the priority. But where basic necessities are met, and economic and physical security satisfied, happiness is prevalent and not as dependent on further economic growth (Bok, 2010).

Often, the water resources prescriptions brought from wealthy countries to poor countries are born from unconscious assumptions embedded in their water experiences where basic security is met. Well-meaning help comes across as prescribing their values to others' cultures. Those who would help should be self-reflective and transparent about their normative prescriptions, as they may conflict with the values of those they seek to help.

To illustrate: before the 2009 Istanbul Water Forum, at a World Water Council (WWC) meeting, there was an almost exact mirror image between the developed and less developed countries as to whether the focus should be on 'best practices', 'no regret strategies' or 'climate proofing' (IWA & WWW, 2008). Developed countries are more likely to think of environment and security in terms of global environmental changes, and developing countries to approach them in terms of the human security implications of local and regional problems. This is not just about politics. It is about values and what hundreds of millions of people actually need.

In this context, Pope John Paul's reflection in 1987 provides illustrative guidance to those seeking to understand the nexus of ethics, faith and science which we find in world water policies. In it he warns of:

'... subjecting poor nations to the imperialist structures of sin that deny them the freedom in development, and that...new forms of technology transfer must be found because today there are frequent cases of developing countries being denied these' (John Paul II, 1987)

Does this Papal caution describe what our water resources aid policies look like to many of those whom we would help today? Are our policies subjecting the poor to 'imperialist structures of sin'?

The wealthy may do better to speak of how they invested and used water when poorer. They could outline their experiences of unanticipated costs over time and help design measures that allow investment but also mitigate or avoid unwanted effects through good design. Such a dialog is now ethically imperative for current aid and investment policies.

Caution: imposing moral judgments of past water resource decisions and their motivations onto today's water resources decisions, on the basis of today's values, can be dangerous.

(2). Changing the terms of discourse in world water debates: rhetoric

Familiar concepts and rhetoric frame our prescriptive policies; such as sustainable development, the precautionary principle, governance, nature, IWRM, non-stationarity and others. Do these help us or impede our abilities to deal with water policies in the context of preference for the poor, development and uncertainty?

2.1. Sustainable development

Sustainable development has increased the potential for dialog among interests not prone to talking or cooperating. To this degree, it has enhanced cooperation and water policy dialogs. However, as an analytical tool, sustainable development can look vague or even contradictory. For example, in 2010 I was helping stakeholders and directors of a major world river organization working to negotiate ‘sustainability’ and ‘integration’ of water resources among many uses along a major waterway. The directors gave me a mandate. Since most of the persons along the river depended on subsistence fishing, we must be careful that projects do not harm this livelihood.

This was a genuine, caring and reasonable mandate. However, the reason one undertakes large water investment is to help transform the social fabric so that those who live on subsistence fishing, and whose fathers before them lived on subsistence fishing, do not have to see their children doing the same.

So, the question becomes: what are we sustaining? A form of predictable, perpetual poverty and subsistence living? This is an important ethical policy question.

If we promise, and those we help expect, a transformed life as a result of our aid projects but design water projects to minimize fundamental change; whose growth or ends are we really serving? Do our nobly inspired efforts once again bring us into the paternalistic trap of knowing better what the other should do? We might ask what sustainability really means. Certainly, it means more than preservation or restoration or status quo, but whose dreams are we trying to sustain?

2.2. Precautionary principle

Water management and governance, everywhere, is moving toward more risk-based decision making. So; the ‘precautionary principle’ is becoming more important. But what does it really mean? Not to decide is a decision in itself with impacts, and ethical implications since nature itself is change. What are the likely impacts or consequences without any action? Too often, the ethics of water investment and governance are portrayed as revolving around costs of doing something rather than weighing them against the likely cost of not doing something, as well as its benefits.

What are the ethics of no decision in the face of needing to decide? How much must we know to decide: 100, 90, 80%...? If the precautionary principle essentially holds 100% certainty as some absolute or asymptotic optimal, then the principle would defeat the very basis for risk-based water governance. More important, if we believe that we never know all the complex interactions, can such exercise of the precautionary principle itself be ethical? Or, is the precautionary principle actually a norm for no action, for minimum action, stasis, or no risk? These are important questions for water resources decision makers if we are to strive for better water management and governance.

Pope Benedict’s words on World Peace Day, 1 January 2008, are useful here:

‘Prudence does not mean failing to accept responsibilities and postponing decisions; it means being committed to making joint decisions after pondering responsibly the road to be taken’
(Pope Benedict, 2008a)

(2.3). Concepts of nature in water decision making

During the 2006 Kyoto World Water Forum, one of the local Japanese newspapers ran an interview with an American, extolling her wonderful experiencing of nature in a local Japanese garden. The experience was clearly real and moving; but is it nature? After all, the park was totally constructed, I suspect, to elicit just such important experiences. So maybe this is nature with human help in design.

At the same time, newspapers in Pennsylvania reported that illegal damming violated regulatory rules for stream flow. Regulatory inspectors reviewed the permit action levied against a landowner only to discover that the illegal diversions were built by local beavers and there was no way to fine the beavers.

A recent report from the respected International Water Resources Management Institute (IWMI) stated,

‘Natural variability in rainfall and temperature means that in many places access to freshwater is already unpredictable. How climate change will alter this ‘natural’ variability is the subject of considerable study ...’ (IWMI, 2009).

So, the natural phenomena of climate change will alter the natural phenomena of natural variability. Even the report has to put the word ‘natural’ in quotes to set it apart from other uses of the word natural, as if there are really different types of natural. Confusions abound.

Are we conceiving of nature as evolving and/or changing, or as something immutable at stasis? Or is it a balancing process of some type? Different world views or beliefs, often unconscious and driven by faith and spirituality, will clearly lead to different advocacy in policy here.

If humans are seen as separate from nature, as in many water policies, then why not the beaver? If ‘pure’ nature experiences (such as the Japanese garden) can be created by humans, are humans not part of the same processes?

Are we confusing creation as process with creation as material world? This is a profoundly important theological question. We might do well to re-clarify our notions of nature versus the western tradition of natural law as we seek to create new water policy.

Many of our water policies tell us to reduce, to as close to zero as possible, our human footprint.

Many actually imply an optimizing function of what appears to be a ‘no humans’ scenario, unless you have humans with no physical impact of humans on the planet. We might be cautioned to avoid the temptation that, in the name of the material, place humans as the problem to eliminate by building policies and regulations with the optimizing function of no human trace.

Pope Benedict, in his recent encyclical *Caritas in Veritate*, lends some light to the Christian world in this endeavor, stating that:

‘Nature expresses a design of love and truth...but it should also be stressed that it is contrary to authentic development to view nature as something more important than the human person. This position leads to attitudes of neo paganism or a new pantheism – human salvation cannot come from nature alone understood in a purely naturalistic sense.’ (Pope Benedict, 2009)

In his book, “When Jesus came to Harvard,” Harvard theologian Harvey Cox reflects that he always struggled to find the best advice for the well-meaning students who wanted to be part of saving the earth: His advice:

*‘... care must be taken when linking the resurrection with ecology; the Christian view of the future, initiated in the resurrections includes both the earth worms and black holes...
...many students...looked to her (mother earth) not just as our mother but also as our savior, a role for which the earth is plainly not suited.....exalting the earth into a goddess Gaia...is...ill advised...and fails to appreciate that she shares our finitude and our mortality...and will eventually burn to ash...also.’ (Cox, 2004)*

We cannot both separate and combine humans and nature for convenience of policy advocacy. We are part of nature. So, who are we? I think that Teilhard de Chardin’s admonition holds well here, and fits within a Christian Creation-centered perspective.

‘... the earth is the altar on which the mass of life is constantly celebrated.’ (Teilhard de Chardin, 2004)

Our beliefs of nature are deep and often unconscious; and they drive values and interests underpinning our water policies. Policymakers would do well to avoid the temptation, in the name of saving creation, to destroy the co-creative–co design process God set in motion.

Maybe as Teilhard suggests, we are nature becoming conscious of its own design (Teilhard de Chardin, 2004).

As Cardinal Ratzinger wrote:

‘Only when creation and covenant come together can either creation or covenant be realistically discussed – the one presumes the other...’ (Ratzinger, 1986)

In this light a new understanding of western-Christian creation myths might be helpful to illuminate paths out of a quagmire of water policy debates.

Georgetown theologian John Haught notes:

‘The futurist understanding of creation has been all but lost during the long centuries of platonically shaped theology...which pictures God as vertically and hierarchically above...and outside the world of becoming...after Darwin the created world seems more at home in a biblical setting...attuned to the Abrahamic and early Christian intuition that ultimate reality comes into the present as an ever renewing future...’ (Haught, 2010)

(2.4) Symbolism and Conflict

The water crisis is primarily one of distribution of water, knowledge and resources and not one of absolute scarcity. But water and conflict/security debates are often driven by notions of physical scarcity and often pass over some of the most salient aspects of water: its powerful roles in building social community; generating wealth through provision of preconditions of economic activities; convening adversaries and providing common language for joint and creative dialogue; integrating, in a practical way, diverse interests and values; and providing a principal tool for preventive diplomacy and for building cultures of cooperation, if not peace (Delli Priscoli & Wolf, 2009).

These roles are embedded in the symbols and rituals of humanity's major faith traditions, and attest to the complex role water actually plays in our lives. Much of the history of water management has centered on periods of too much (flood) or periods of too little (drought). Dealing with this uncertainty has been a dialogue between humanity and nature, geography and human jurisdictions. This dialogue has taken us from the sacred to secular and scientific as ways of dealing with uncertainty.

Classical humanity's respect for water lay in its sense of water's sanctity. Tertullian, one of the fathers of the early Christian church, in *De Baptismo*, says that:

'... water was the first seat of the divine spirit, who then preferred it to all other elements. It was water that was first commanded to produce living creatures...It was water which, first of all, produced that which is life.' (Eliade, 1991)

These and other such notions supported a value system underlying Roman water supply practice that tried to provide a free-flowing supply of water to its citizens (Tanner, 1987). In the Mayan state, priests presumably determined annual planting schedules, receiving a customary tribute from the harvest (Gyuk, 1977). In the Khmer empire, temples were associated with reservoirs, as the spiritual abode of the god king (Gyuk, 1977: 7).

Vitruvius notes, in *De Architectura* of 27 BC:

'Hence also those who fill priesthoods of the Egyptian tradition show that all things arise from the principle of water...therefore, in as much as physicists, philosophers and the clergy judge that everything consists of the principle of water, I thought fit that...I should write...about...water' (Vitruvius, 1985)

The title of 'superintendent of rivers and waters' in Renaissance Italy was awarded to some of the most famous of the fontanieri (the designers of fountains), which title meant more than engineering and included a knowledge of 'hydro mythology' as well as hydraulics, physics and science. These persons, who worked on urban water as well as fountains, defined themselves by their mission of transforming the stagnant into the flowing, the pond into the fountain, and mortality into vitality. They saw themselves as magi – wise men who were to discover universal principles (Schama, 1995: 277–279).

After the discovery of Frontinus's book, *The Aqueducts of Rome*, in 1425, the Pope inaugurated a papal reform program which saw the renewing of pure and flowing water as a sacred and civic duty (Frontinus, 1925; Vitruvius, 1912).

Our Western history teaches us over and over that ethics are related to water policies. But, there is a balance between sanctity and the utilitarian aspects of water. This balance point will

differ throughout the world.

Goubert traces the provision of sanitation and water supply in 18th and 19th century France, calling it the ‘conquest of water’ (Goubert, 1989). This conquest through the use of technology, markets and other utilitarian devices has facilitated the democratization of water, that is, the increased access to water and sanitation.

In the 17th century, when the Jesuit Pais visited the source of the Nile with the Coptic King of Ethiopia, the river was taken as a symbol of an ‘ecumenical cosmology’, a symbol that all comes from an undivided source and a unity of a world of faith (Schama, 1995: 300).

After the building of the flood defenses in Dagenham on the Thames, in 18th century England, a ritual of hydraulic thanksgiving was established. A gathering of all politicians with the people to feast on common food in a celebration of community, among many who were adversaries, it was actually put on the parliamentary calendar (Schama, 1995: 254).

One author finds parables in the molecular behavior of water which reflect these ideas.

Warshall
(1995) states:

‘Despite science’s continual attempt to rid itself of subjective metaphor and myth, the contemporary creation story and our images of molecular water do not truly break with ethical tone and more ancient human perceptions of water. Molecular water is still an arbiter of creativity and danger, purity and pollution, integrity and freedom, coherence and looseness, gathering and dissolving, rectitude and passive acceptance, benevolence and murder. Water remains one model for love, memory, and the needs of the soul.’

As the management of water uncertainty and risk improves, social prosperity, growth and social transformation are enhanced. This enhanced growth changes priorities and highest value uses of water to society, which in turn offers new opportunities for ways to combine its uses. But through it all, the same water is recycling; only the configurations of human use and needs change. Indeed, ancient Chinese as well as modern western poets have used the same metaphor: “water is the carrier of collective memory of humanity.”

When mediators and/or negotiators sense something more about water, somehow it is this perpetual connection that comes through. It is a link to the spiritual dimensions of the process of building agreement and connecting people that many often seem to sense.

(2.5) Governance, valuing water and water management decisions

The awareness of a critical relation between political culture and water policy is not new. We see it with Karl Wittfogel’s Oriental Despotism. One of the oldest continuous western democratic institutions is the Valencia water tribunal. The Dutch water boards have operated since the Middle Ages and are widely acknowledged to have provided a model for modern Dutch democracy.

Returning to Gandhi and Sen – poverty is the worst polluter and development equals freedom: can political cultures of authoritarian, or centralized or highly regulated administrative systems support water policies that produce development, poverty reduction, public access data, transparency and freedom? Almost exactly opposite the Wittfogel thesis.

Allocating and reallocating water is the heart of water resources management. It is achieved, for good or bad, within a variety of political cultures and governance systems. As the development changes, so too do societies needs and thus the way people value water and its uses. No matter the system there are always costs and distributive ethical issues. Hiding costs, transfers, subsidies and risks can be disastrous and keep societies from meeting needs and even stunt capacity to develop. Accountably and legitimacy of political systems increasingly rest on transparency of transfers, subsidies, risks and active involvement people in these water decisions.

Making water management decisions has become more clearly part of building political culture. Today our publics need to be actively involved in defining and then actively choosing (rather than passively accepting) management levels of risks given to them by experts: the heart of IWRM and adaptive management.

Several years ago, Engineering ethicist Taft Broome, in the Washington Post, noted:

'... engineering is always an experiment involving the public as human subjects. This new view suggests that engineering always oversteps the limits of science. Decisions are always made with insufficient information. In this view, risks taken by people who depend on engineers are not really the risks over some error of scientific principle. More important and inevitable is the risk that the engineer, confronted with a totally novel technological problem, will incorrectly intuit which precedent that worked in the past can be successfully applied this time. ...Interestingly these new moral dimensions are not being created primarily by philosophers. They are the works of engineers themselves' (Broome, 1986)

Broome's summary suggests that water management should move from paternalism to an informed consent basis for professional ethics, that societies must overcome the phenomena of dueling experts and adversarial science, and that we must clarify the confusion of science and normative ethics.

As Cardinal Turkson noted at Stockholm WW 2016, Water and Faith panel;

"Simply put, motivation to virtue is the valuable contribution that religious faith and spiritual practices can and must bring to development, through their spiritual leaders and the multitudes of believers and adherents." (Cardinal Turkson at Water and Faiths: Faith based Organizations contributing to the Water SDGs" [World Water Week 2016 in Stockholm Monday](#))

3. Concluding suggestions.

Yes, we must respect our ecology. Yes, we must be good stewards. But there is more:

(i) In our water policies, we should adopt a preference for the poor and ask what our water policy

prescriptions mean to the poor. In 2008, Pope Benedict offered useful guidance here when he said:

'... if protection of the environment involves costs...they should be justly distributed taking into account different levels of development of various countries and the need for solidarity with future generations ...' (Pope Benedict, 2008a)

The Anglican Book of Common Prayer further admonishes us:

'Give us all a reverence for the earth as your own creation, that we may use its resources rightly in the service of others and to your honor and glory...' (Anglican Book of Common Prayer, 1979)

Faith based organizations could partner with pastor in remote and rural areas to bring basic water and sanitation to small rural areas.

(ii) We must go beyond seeing water as primarily humanitarian AID and reconnect water as the vital tool for economic and social development. This means pricing water, transparent regulated markets, private -public partnership and significant infrastructure investments along with soft programs.

(iii) We need to build a new ideological and ethical consensus around water that focuses on the common grounds of engineering means and environmental ends. It must be a consensus that goes beyond equilibrium, status quo and preservation notions of ecology towards co-designing and choosing desired future ecologies.

The ethic we require is not simply preservation; it must be built teleologically, on purpose and by active co-designing with nature.

(iv) The water policy ethics we require, even in our advanced technological era, should be based on finding a new balance of the sacred and utilitarian in water. This balance is not new, although our balance point is. From the ancients' respect for the sanctity of water to 19th century technology's 'conquest' and democratization of water, humans have been constantly rebalancing the sanctity and utilitarian in water.

(v) We must find a new understanding of humans and nature, an understanding that goes beyond engendering fear of the future based on observed changes with limited understanding of their historical contexts.

Tielhard's observation many years ago, sheds light for us:

'For my part, I do not believe in the supreme effectiveness of the instinct of preservation and fear. It is not the fear of perishing but the ambition to live which has thrown man into the exploration of nature, the conquest of the atmosphere and the heavens' (Teilhard de Chardin, 1965)

We need to form a new understanding of how the human and natural fit. Perhaps we should see ourselves as nature becoming conscious of our own design.

The idea, adopted by the UN World Water Assessment, that water is everyone's business, as it constantly recycles through us all, is more than abstract philosophy. It carries practical policy implications. In 2015, Pope Francis, noted:

“Our world has a grave social debt towards the poor who lack access to drinking water, because they are denied the right to a life consistent with their inalienable dignity. This debt can be paid partly by an increase in funding to provide clean water and sanitary services among the poor.”

Thank you for your attention

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