Bangladesh Journal of Public Administration Volume XVI Number I 2007 ISSN 1563-5032

Ethical Issues in Water Use and Environmental Sustainability

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Abstract : *Fresh water will be the main problems of development in the 21st century. So the present discussion on water use, conservation and sustainability begins supposing that protection of the water environment is a ethical imperative, but hardly ever questions the basis of this standpoint. However, the present article is an endeavor to classify some of the basis that might inspire such a position, seeking to locate value in the natural world beyond anthropocentric utilitarianism. Only when there is a clear basis for this discussion it is possible to discuss and resolve issues and conflicts that arise in the management of water that means between present and future users, between human and non-human users, or between competing human users. We then attempt to develop a 'code of water use ethics: parallel to the famous 'land ethics' in which we see water as the centre of the web of life in the landscape. Protecting water; its quality and its availability, for all present and future users, is one touchstone for the evaluation of environmental action andpolicy.*

Introduction

Water, the common symbol for humanity, valued and respected in all religions and cultures, has also become a symbol for social equity. For the water crisis is mainly one of distribution of water, knowledge and resources and not one of absolute scarcity. As such, questions of access and deprivation underlie most water decisions. We need therefore to understand what common ethical principles can be accepted as applicable in all geographies, in all stages of economic development and for all time. We also need to recognise that in implementing these ethical principles there can and will be different strategies and methods which will be appropriate for different situations'. However, the ethical principles which inform such policies will be consistent throughout the world.

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1 Lord SELBORNE, The Ethics of Freshwater Use: A Survey, UNESCO, 25 October 2000, p. 10

In the present world, different scholars and peoples say water is not a commercial product like any other but, a heritage that must be protected, defended and treated as such a divine gift[2]. Much of the modern debate on the issue of water sustainability as quoted above from the preamble to a European Directive starts from the moral imperative, yet fails to provide a justification for that moral concern. This paper attempts to explore that justification by asking why we are concerned about water sustainability in the first place. It is thus concerned to explore the issues of why we, as individuals, as a society, as scientists, as human beings, should be concerned with water sustainability. The discussion of motives for behavior is the subject of ethics and so this paper attempts to consider some of the ethical arguments underlying the concern for sustainable use of water. It then attempts to define a 'water ethics' that can be the basis for future actions. We are awash water with statements that imply such a water ethics. Water sustainability is not an optional extra, it is something we 'must' do, and the inclusion of the 'must' in a statement implies an ethical imperative. A good example is given by the European Water Framework Directive EU 2000.

As the European Water Framework Directive EU 2000.goes on to establish a framework and timetable for the identification and preservation of all water bodies. Ultimately it strives to achieve 'good ecological status' for all water bodies that are not 'heavily modified', and so sets a standard that is defined not in terms of the quality of the water itself, but in terms of the quality of the environment it supports. For the highest quality water bodies, that requires the maintenance, or restoration to, a 'natural condition', however that is defined[3]. The process of defining the status of all water bodies is currently under way in all countries of the European Union and accordingly some Asian and Africal countries are trying to formulate rules and policie for their respective countires, so this statement is no theoretical proposition, but the basis of current action by all member states. The problem with such an ethical statement is that it cannot be readily defended against the 'Why?' question. It appears 'out of the blue' as an

[2] EU Directive 2000/60 of the European Parliament and of the Council of *23* October *2000* establishing a framework for community action in the field of water policy EU, Luxembourg, *2000.*

[3] EU Directive 2000/60 of the European Parliament and of the Council of *23* October *2000* establishing a framework for community action in the field of water policy EU, Luxembourg, *2000.*

unsupported self-evident assumption that is held to be unquestionable. It is thus parallel in many ways to the 'rights' enshrined in statements such as the Universal Declaration of Human Rights. It is equally possible to say, 'I disagree', and carry on exploiting and polluting without any moral qualms, even if not without legal implications. It is the aim of the paper to try and answer that implied criticism. To do so it needs to identify an ethical reason for protecting the environment in general, and water in particular.

Basis of Apprehension for the Environment

The central problem for all environmental ethics is the resolution to that 'why should I care?' question, which in effect requires a resolution of the question as to where value is to be located in the environment[4]. There are many ways of answering this question, and depending on how we do this, we end up with different ways of seeing the problem. Each way of answering the problem leads to the definition of a 'discourse community' in which the issues and types of problem are restricted by common assumptions, and often a common language[5]. However, before we can make progress in identifying the discourse in which we are embedded, we first need to consider the bases for considering **the** environment. **As** a start, we identify four major strands, which appear in varying degrees of strength. This is, of course, a very rapid and crude classification of an enormously rich field of debate. These four major positions are discussed below:

Utilitarian Views

The utilitarins recognize environment is very importance because without the sound environment we cannot survive. According to the utilitarins, water is awfully precious, because we need it to live, and accordingly we protect it in so far as it benefits us. The problem then is how widely we define the community of 'us'. Is the Us/We body defined by our personal needs, our family, our neighbours; or by our political allegiance, to a city, a state, or even to a supranational

[4] Attfield R, Environmental ethics, Cambridge: Polity Press, 2003, p. **32.**

[5] Dryzek J. S., Downers D., Hunold C., Schlosberg D., Green states and social movements: environmentalism in the United States, United Kingdom, Germany and Norway, Oxford: Oxford University Press, 1997, p. 9.

organization, such as the European Community; or does it encompass the whole of the human race? But however widely defined, this viewpoint will not defend water that is outside of human need or use (and so for example is prepared to accept polluted discharges if we already have sufficient for our needs; and does not protect water in uninhabited areas such as the polar regions). Nevertheless, this stance includes the 'rights' argument of Gleick, who argues that water is a basic human right, because it is implied by the right to life, food and health, that is central to the United Nations Universal Declaration of Human Rights[6]. One frequent consequence of the adoption of a utilitarian stance is the adoption of an economic perspective of utility, which then attempts to assign money values to the environment and environmental services, among them water, in order to allocate the scarce resources between competing demands.

Consequentialist Views

The Consequential ethicists argue that we are accountable for the consequences of our **any** actions, that this responsibility rests on all human beings, and extends to the consequences for all human beings, both present and in the future. We thus need to protect all natural resources as divine goods, including water, because they may be of value to our fellow human beings, either elsewhere in the world, or in the future[7]. The needs to protect current resources for future users is the core of the sustainability argument. Although on the surface, this stance seems reasonable, there are in detail some difficulties in defending it. In particular, it is difficult to define to whom we are responsible. The theistic stance, which says we are responsible to a god is discussed below. But if we decide that the responsibility is to the rest of humanity, or to future generations, then how can that responsibility be articulated? For example, how can we be responsible to people in the future, when we do not even know that they might exist? Or how can we balance the needs of the presence with those of future generations? Equally, there are difficulties in defining what sort of responsibilities we might have to non-human creatures, or even to inanimate nature, when these have no way of expressing any

[6] Gleick, P., "The human right to water". Journal of Water Policy, vol. I, 1999, pp. 487-503.

[7] David S. Oderberg, Applied Ethics: A Non-Consequentialist Approach, Blackwell Publishing, 2000, p. 61.

interaction with us, or of criticizing our actions[8]. Nevertheless, despite the theoretical difficulties, this stance is popular, perhaps representing a residual cultural theism.

Intrinsic Views

The intrinsic ethical argument states that the environment, however defined, has value of itself, and is not just as an object for human exploitation or enjoyment[9]. As such, the environment is in need Ethical issues in water use of protection from abuse by human beings. There is then the argument as to what degree of human use is 'natural' and when does it become exploitation. This sort of understanding is what underlies the influential 'land ethic' of Aldo Leopold[10] and which will underlie the proposed 'water ethics' to be developed later in this paper. The biggest problem often lies in articulating this value, which needs to be distinguished from the economic value often used in utilitarian arguments. Whereas it may be feasible to assign values to individual components of the environment, it is difficult to see how the value of a concept as vague as an ecosystem as envisaged by Aldo Leopold can have rights.

Theistic Views

The last and most powerful argument for valuing the environment is the belief that it is the creation of a divine being, and that human beings have responsibility to that god for their use of creation. A Christian version of the theistic argument was presented by Armstrong and Armstrong[11], although it will not be considered in detail here. Nevertheless, the language of theistic responsibility has been common, as in the famous remark by Margaret Thatcher, the then prime minister of United Kingdom, 'We have a life tenancy with

[8] Stephen Darwall edtied., Consequentialism, part II & III, Blackwe3ll editor's series, Blackwe3ll Publishing, 1998.

[9] Jonathan E. Alder, "The Ethics of Belief: Off the Wrong Track", Midwest Studies in Philosophy, vol XXIII (1), 1999, pp. 267-285.

[10] Leopold, A., **A** Sand County almanac, Oxford University Press, 1949, Special edition Commemorative edition, with Ethical issues in water use 15 Sketches here and there, Finch, R. ed Oxford University Press, Oxford 1987

[11] Armstrong, A. C. and Armstrong, M. B., **A** Christian perspective on water and water rights, Paper presented to the International Water History Association meeting, Bergen 2001 in Tvedt T and Ostigaard Teds, A history of water vol. 3, The world of water I- B Taurus Press, London: 2005, pp. 367-84.

a full repairing lease'. The theistic model'also underlies much of the language of stewardship, although some theologians have challenged the use of the model underlying the stewardship concept, e.g. Palmer C[12]. However, the theistic argument, particularly its Christian formulation, has been heavily criticized in the much quoted essay by White[13]. He sees the command in the Biblical book of Genesis to 'fill the earth and subdue it'[14] as one of the bases for the exploitation and use of the environment that is one of the characteristics of modern Western technology, and which thus forms one of the 'historical roots of our ecological crisis'. The Christian theistic stance, however, more normally supports a view similar to that of the intrinsic stance, in that the world is valued because it is created by, and loved by, God. Equally the injunction in Genesis is to be seen in the context of Adam the gardener, not Adam the exploiter. Modern Christian theism is far less inimical to the environment than Lynn White suggested[15]. It may seem that in ethics, the way to proceed is to follow the old adage: 'you pays your money and you takes your pick'. The object of this essay is, however, not to convince the reader to follow any **one** particular way of doing ethics, but to recognize the ethical components of their own position, and those of their opponents. Frequently, conflict over environmental issues is between those with different ethical bases, and it is important to be able to identify these conflicts, and develop methods of entering debates with holders of other viewpoints.

A Classification of Environmental Discourses

The classification by Dryzek provides a very useful starting point for the analysis of environmental positions. In it, he identified two classifications: progressive vs radical, and prosaic vs imaginative[16]. This then gave a four-fold classification, which is given in Table 1, modified to concentrate on the issues associated with water.

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[12] Palmer, C. Stewardship: a case study in environmental ethics in Ball, I. Goodall, M. Palmer, C. and Reader, J. Eds., The earth beneath: a critical guide to green theology SPCK, London: 1992, pp. 67-86.

[13] White, L., The historical roots of our ecological crisis, Earth Science, 1967, pp. 155, 1203-7.

[14] Gary Clifford Gibson., Creation & Cosmos; the Literal Values of Genesis, Lulu Press, Inc., 2005 USA, pp.72-90.

[15] White, L., The historical roots of our ecological crisis, pp. 1205-1208.

[16] Dryzek, J. S., The politics of the earth: environmental discourses, Oxford University Press, Oxford 1997.

Dryzek also importantly identifies each of these categories as a 'discourse group', each with its own assumptions, languages and agendas. Conflicts can arise when different discourse groups approach the same topic, for although they use common words, they often use them in entirely different ways. The classic case is the conflict between those environmentalists who think of the natural world as 'beyond value', and those ecological economists who try to put monetary values on ecological services. Both talk of value, but in very different ways. Hence the failure of the first group to put money values on the environment is not so much a refusal to 'play the game', but an approach from a different philosophical stance. The two belong to different discourse groups.

In these circumstances, it is no surprise that, when faced with a contingent valuation exercise, some participants report that they 'struggled with this money business'[17].

Table 1

A classification of environmental discourses, after Dryzek as mentioned above, with additional sub-classes relevant to the current paper (in italics).

	Progressive	Radical
Prosaic	Problem solving	Survivalism
	'leave it to the experts'	*Resource exhaustion*
		Promethean optimism
Imaginative	Gradual transformation	Green radicalism *Deep ecology* *Special pleading groups* *A land ethic* *A water ethic*

Each of these groups has different perspectives on water and water use, and so will be discussed briefly in turn.

[17] Clark, J., **Burgess, J. and Harrison, C. M., 'I struggled with this money business'; respondents' perspectives on contingent valuation Ecological Economics vol. 33, 2000, pp. 45-62.**

Group 1: Survivalism

This group focuses on the fact of the finite resources of the Earth. The classic expression of this approach is the Club of Rome 'Limits to growth' report[18]. This famous document was in many ways part of the 'wake-up call' which roused interest in environment issues in the late 1960s and early 1970s, with its alarmist message about the consumption of finite resources. Water, being renewable, is different from many of the resources considered by the Club of Rome's analysis. However, it is still subject to the same fundamental limitation that, in some parts of the world at least, there is a limit to the number of people that can be accommodated, due to the inherent scarcity of water. A direct analogy to the finite resource argument is given by those places where the continued abstraction of groundwater is not sustainable in the long term. Dryzek then identifies two responses to the threat of limitation by finite resources. One group, the 'prophets of doom' focus their attentions on the limitations, and see a neo-Malthusian limitation to human advancement and activities. The alternative 'Promethean' response focuses optimistically on the continued ability of the human mind to resolve its problems, and so argue that the only real limit is that of human ingenuity. Either way, the approach of this group is to identify and focus on the limits posed by the finite supply of water to the globe. To them, water is a limited resource, and we must find ways of working within that limit, either by conserving its use, and so remaining within the limit; or by finding new technological fixes to improve the use of water, effectively increasing the limit through technological innovation.

Group 2: Problem Solving

This approach is perhaps the one to which the majority of the scientific, government and consultancy community would belong. The solution to environmental problems is seen as the province of technical experts who are expected to derive technical solutions to environmental problems. Consequently, most of the issues over water supply, and water use are seen as technical problems requiring

[18] Meadows, D.H., Meadows, D. L., Randers, J. and Behrens, W., The limits to growth, London: Pan Books, 1972, p. 26-30

technical answers: the correct allocation of resources is a matter of economics and engineering, the development of effective catchment management strategies the province of hydrologists, geographers and planners, the management of ecosystems to ecologists, and so on. These technical experts are adept at developing solutions to problems that are then implemented by an essentially benevolent state, which they serve, and which itself reflects the true wishes of the entire community. How far various states have progressed down the road to the development of such a benign, 'green' state is discussed with usual candour by Dryzek and others[19].

The catch phrase of this group is, in Dryzek's analysis 'leave it to the experts'. The experts define the problem, and propose the solutions; the answer to technology's problems is more and better technology.

Gradual Transformation

This group attempts to derive a sustainable social and economic order through the transformation of the existing order[20]. It recognizes that there may be things fundamentally wrong with the way things are done at present, but argues that this is best dealt with by a gradual transformation of the existing order, rather than a radical rebuilding of it. This group is thus essentially optimistic and idealistic, and so does not attempt radical reform, but rather advocates a gradual metamorphosis. The key ways to achieve its aims are thus education and example, and only secondarily legislation. Such a group would ally itself quite closely with the technical experts of the previous group, but would argue that they need to be supplemented by changes to the social and economic order, as well as to the technology of using the environment. The keyword of this group is 'sustainability', attempting to impose a sustainable agenda onto the current world order.

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[19] Dryzek J. S., Downers D., Hunonld C., Schlosberg D. with Hernes H-K **2003,** Green states and social movements: environmentalism in the United States, United Kingdom, Germany and Norway, Oxford University Press, Oxford, **2003.**

[20] Dryzek **J**. S., Downers D., Hunold C., Schlosberg D. with Hemes H-K **2003,** Green states and social movements: environmentalism in the United States, United Kingdom, Germany and Norway, Oxford University Press, Oxford, **2003.**

Group 4: Radical Transformative

This group is perhaps the most diverse. It argues that the only way to save the environment and the planet is through a complete and radical transformation of its social and economic structures.

Radical solutions thus tend to offer visions of a future, motivated by a variety of interests. These include those associated with special issues, for example the eco-feminist argument, the animal rights movement and religion-based ethical movements. A common thread running through all these groups is the rejection of current approaches to the environment, and the advocacy of a radically new way of thinking. It thus frequently, though not necessarily, rejects the technological fix, the expert solution and the utilitarian valuation. It thus tends to reflect Clark's argument that only a religious or pseudo-religious commitment to the environment will generate the necessary motivation to adopt the radical shifts and sacrifices necessary to introduce such a new world order[21]. This group also includes the 'Deep Ecology' movement following in the steps of the Norwegian Philosopher Arne Naess (see, for example, Naess and Rothenberg 1989; Drengson and Inoue 1995). We also place Aldo Leopold's (1949) land ethic in the same category, and therefore the water ethics that we develop here.

Water Ethics

In attempting to develop a specific water ethics, we take as our starting point Aldo Leopold's land ethics, in which he states, famously, 'A thing is right when it tends to preserve the integrity, stability and beauty of the biotic community. It is wrong when it tends otherwise'. A water ethics does not disagree with this formulation, but rather focuses on, and emphasizes, the role of water within the total land system. It sees water as occupying many functions within the total land and eco-system, including:

- a component of the ecosystem itself,
- as a habitat (in the form or wetlands, rivers and lakes),

[21] **Clark, S. R. L.,** *How to think about the earth: philosophical and theological models for ecology.* London: **Mowbrays.** *1993.* **pp. 72-86.**

- as an essential for life, yet consumed by life,
- an essential component in the transport of material and energy within the ecosystem, and
- as a forming agent, responsible for the erosion, transport and deposition of material, and hence a major element in the sculpture of the land surface. So if we want a romantic image, we can see clean, plentiful flowing water as the driver and former of the whole ecosystem. A water ethic would then focus on the ability of water to sustain the life that depends on it. Water does not then become the end of our action and concern, but the focus for developing a concern for the whole of landscape, the whole of the complex matrix of life, both human and non-human that depends on it.

We could thus tentatively identify a water ethics as saying: 'A thing is right if it preserves or enhances the ability of the water within the ecosystem to sustain life; and wrong if it decreases that ability'. This is, of course, very much a view evolved in the globe, where we have lots of water, only rarely in damaging excess. In this we follow a pattern identified by Arne Naess, who linked his philosophical ecology with his summer refuge in the Norwegian fords, by terming it 'ecosophy T', after his mountain hut, Tvergastein[22].

The water ethics derived from the environment thus sees water as having a central role in the biosphere, as the carrier of the fluxes that make the whole biosphere so active, so varied and so rich. In this situation, water is an essential component of all life, and 'water ethics' should strive to ensure that each organism in the whole has the water it needs, in the appropriate condition. Water ethics would thus strive to maintain the flows and transfers of water, to enhance the quality of life of the entire land-air-water-life system. It should thus attempt to prevent any one component of the ecosystem particularly human beings from diminishing the life opportunities for the others, by either taking all the water resource to itself, or else by polluting it so it becomes unusable. We human beings should then work to keep human use of water to the point where it does not compromise the life

[22] Drengson, A. and Inoue, Y.. *The deep ecology movement: an introductory anthology*, Berkeley CA: North Atlantic Books, 1995. p. 24.

of any other organism, either present or in the future. We thus seek to create a sustainable use of water, by seeking to enable water to sustain the whole ecosystem that relies on it.

This viewpoint therefore includes within it the conventional sustainability and utilitarian argument, because it would require that water be available for all life, and extend it to include all non-human life.

It would thus reinforce the assertion of Gleick of the human right to water, as that human life would also be part of the life that is to be sustained, although it would extend that right to other non-human species[23]. It would therefore also support the programme of the UN Water Resource Managment guidelines, in aiming for 'good ecological status' for all water bodies. It might take issue, however, ,with the statement contained within the directive that such 'good .ecological status' can be identified with the 'natural' condition, before the intervention of human beings in the landscape. If we argue, for example, that a 'natural state' implies a pre-human settlement state, we could then argue for a restoration of the landscape to its state as it was natural. The water ethics would, in contrast, see the need to reconcile the demands of all the existing users of water including all human beings and all the potential users, both human and non-human, both current and future, without the need to refer to any vaguely defined 'natural' condition.

Such an ethics then delivers a definition of environmental 'right and wrong'. Any modification of the water system is 'wrong' if it damages the life that relies on the water within the system. It will thus condemn as 'wrong' the unnecessary drainage of wetlands, the pollution of rivers, the excessive use of groundwater. At the same time it would identify as 'right' the clean-up of polluted water bodies, and the creation of nature reserves. However, such an ethics, because it embraces both human and non-human life, does not require an automatic assumption in favour of either party. It does not assume an automatic presumption in favour of human use as a utilitarian ethics might, nor an automatic assumption in favour of 'natural' non-human use, as the more extreme end of the

[23] **Dr Gleick. P., The human right to water Water Policy Journal. vol. 1. 1999, pp. 487-503**

environmental movement would have us adopt. Rather, it establishes a framework in which the rather difficult balancing act could be made. It ends up by saying that the human use of the landscape, once established, needs to be sustained; but that at the same time the non-human use needs to be maximized. It thus requires humankind to reduce its environmental footprint, and so to minimize the impact of its activities, but not to act to its own direct detriment.

Such a water ethics, however, does not enable us easily to distinguish between competing demands for water. Rather it imposes on human beings the imperative to consider the demands of all potential users, as defined in the widest possible way. This may seem to weaken its claim to be a practical ethics, as one of the jobs of an ethics is to delimit what actions are 'right' or 'wrong'. Careless or deliberate abuse is clearly wrong, but the problem is always to decide between competing goods. Perhaps the best that any ethics such as this can offer is to make the case for the non-human elements when coming to any decision. Perhaps it is better not to offer any easy solutions, because these too easily become inflexible dogmas. Rather the water ethics provides a framework in which to try and resolve the issue when conflict arises. It may be possible to eventually decide that the human requirement for water in a situation of scarcity is the dominant and over-riding consideration for human action, and so accept with regret the destruction of non-human life in some circumstances. It might on the other hand put the human needs below that of the ecosystem, and so establish nature reserves or wilderness areas.

There is no theoretical a priori assumption in favour of either direction, only an imperative to consider the whole of the issue. The ultimate wrong is to proceed without thinking.