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The human right to water

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Abstract

More than a billion people in the developing world lack safe drinking water — an amenity those in the developed world take for granted. Nearly three billion people live without access to adequate sanitation systems necessary for reducing exposure to water-related diseases. The failure of the international aid community, nations and local organizations to satisfy these basic human needs has led to substantial, unnecessary and preventable human suffering. This paper argues that access to a basic water requirement is a fundamental human right implicitly and explicitly supported by international law, declarations and State practice. Governments, international aid agencies, nongovernmental organizations and local communities should work to provide all humans with a basic water requirement and to guarantee that water as a human right. By acknowledging a human right to water and expressing the willingness to meet this right for those currently deprived of it, the water community would have a useful tool for addressing one of the most fundamental failures of 20th century development. © 1999 Elsevier Science Ltd. All rights reserved.

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If the misery of our poor be caused not by the laws of nature, but by our institutions, great is our sin. (Charles Darwin)

The test of our progress is not whether we add more to the abundance of those who have much; it is whether we provide enough for those who have little. (Franklin Delano Roosevelt)

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1. Introduction

The 21st century will open with one of the most fundamental conditions of human development unmet: universal access to basic water services. More than a billion people in the developing world lack safe drinking water that those in the developed world take for granted. Nearly three billion people live without access to adequate sanitation systems necessary to reduce exposure to water-related diseases. The failure of the international aid community, nations and local organizations to satisfy these basic human needs has led to substantial, unnecessary and preventable human suffering. An estimated 14–30 thousand people, mostly young children and the elderly, die *every day* from water-related diseases. At any given moment, approximately one-half of the people in the developing world suffer from disease caused by drinking contaminated water or eating contaminated food (United Nations, 1997b). A diverse array of individuals, professional groups, private corporations and public governmental and nongovernmental interests have recently stepped up efforts to better manage and plan for meeting basic water needs in the next century. The outcome of these efforts will be vital to the health and well-being of billions of people. This paper argues that access to a basic water requirement is a fundamental human right implicitly supported by international law, declarations and State practice. In some ways this right to water is even more basic and vital than some of the more explicit human rights already acknowledged by the international community, as can be seen by its recognition in some local customary laws or religious canon.

A transition is underway making a right to water explicit. As we enter the 21st century, governments, international aid agencies, nongovernmental organizations and local communities should work to provide all humans with a basic water requirement and to guarantee that water as a human right. By acknowledging a human right to water and expressing the willingness to meet this right for those currently deprived of it, the water community would have a useful tool for addressing one of the most fundamental failures of 20th century development.

2. Is there a human right to water?

The term ‘right’ in this paper is used in the sense of genuine rights under international law, where States have a duty to protect and promote those rights for an individual. The question of what qualifies as a human right has generated a substantial body of literature, as well as many organizations and conferences. The initial impetus to human rights agreements was to address violations of moral values and standards related to violence and loss of freedoms. Subsequently, however, the international community expanded rights laws and agreements to encompass a broader set of concerns related to human well-being. Among these are rights associated with environmental and social conditions and access to resources. The extent to which environmental rights are either found in, or supported by, existing human rights treaties, agreements and declarations has been the subject of a growing literature (Boyle & Anderson, 1996).

This paper answers the question of whether individuals or groups have a legal right to a minimum set of resources, specifically water, and whether there is an obligation for States or other parties to provide those resources when they are lacking. This question has not been

adequately addressed. Several of the major references and bibliographies related to the issue of human rights have no entries or citations related to water (Lawson, 1991; Steiner & Alston, 1996; United Nations, 1993). Even the current index of the website of the UN High Commissioner for Human Rights has no entry for water (<http://www.unhchr.ch/index.htm>). In 1992 McCaffrey tackled the legal background from the perspective of the UN (and related international law) human rights framework in a comprehensive and perceptive assessment. His initial conclusion was that there is a right at least to sufficient water to sustain life and that a State has the 'due diligence obligation to safeguard these rights' as a priority (McCaffrey, 1992). This paper expands upon that analysis and concludes that international law, international agreements and evidence from the practice of States strongly and broadly support the human right to a basic water requirement.

What is the value of explicitly acknowledging a human right to water, as the international community has explicitly acknowledged a human right to food and to life? After all, despite the declaration of a formal right to food, nearly a billion people remain undernourished. One reason is to encourage the international community and individual governments to renew their efforts to meet basic water needs of their populations. International discussion of the necessity of meeting this basic need for all humans is extremely important — it raises issues that are global but often ignored on the national or regional level. Secondly, by acknowledging such a right, pressure to translate that right into specific national and international legal obligations and responsibilities is much more likely to occur. As Jolly (1998) of the UNDP notes:

To emphasize the human right of access to drinking water does more than emphasize its importance. It grounds the priority on the bedrock of social and economic rights, it emphasizes the obligations of states parties to ensure access, and it identifies the obligations of states parties to provide support internationally as well as nationally.

A third reason is to maintain a spotlight of attention on the deplorable state of water management in many parts of the world. A fourth is to focus attention on the need to more widely address international watershed disputes and to resolve conflicts over the use of shared water by identifying minimum water requirements and allocations for all basin parties. Finally, explicitly acknowledging a human right to water can help set specific priorities for water policy: meeting a basic water requirement for all humans to satisfy this right should take precedence over other water management and investment decisions.

3. Existing human rights laws, covenants and declarations

There is an extensive body of covenants and international agreements formally identifying and declaring a range of human rights. Among the most important of these are the 1948 Universal Declaration of Human Rights (UDHR), the 1966 International Covenant on Economic, Social and Cultural Rights (ESCR), the 1966 International Covenant on Civil and Political Rights (CPR), the Inter-American Convention on Human Rights, the Declaration on the Right to Development (DRD), the 1989 Convention of the Rights of the Child (CRC) and the European Convention on Human Rights. Among the rights explicitly protected by these

various declarations and covenants are the rights to life, to the enjoyment of a standard of living adequate for health and well-being, to protection from disease and to adequate food. Although access to clean water is a precondition to many of these rights, water is explicitly mentioned only in the Convention of the Rights of the Child. Is a right to water a ‘derivative’ right — that is to say, is a comparable human right to water implied by these declarations — or can it be inferred from the debate over, and background materials from, the existing covenants? Is water so fundamental a resource, like air, that it was thought unnecessary to explicitly include reference to it at the time these agreements were forged? Or could the framers of these agreements have actually intended to exclude access to water as a right, while including access to food and other necessities?

A detailed review of international legal and institutional agreements relevant to these questions supports the conclusion that the drafters implicitly considered water to be a fundamental resource. Moreover, several of the explicit rights protected by international rights conventions and agreements, specifically those guaranteeing the rights to food, human health and development, cannot be attained or guaranteed without also guaranteeing access to basic clean water. These conclusions are discussed below. In recent years, more explicit articulations of this view supporting the right to water have been made.

3.1. The right to water as an implicit part of the right to food, health, human well-being and life

At the United Nations Conference on International Organization, held in San Francisco in 1945, it was suggested that the United Nations General Assembly develop a bill of rights. The subsequent UN Charter requires the Economic and Social Council to set up a commission for the promotion of human rights — the only commission specifically named in the Charter. The Commission on Human Rights held its first meetings in 1947 and agreed to prepare for the General Assembly both a declaration and a convention on human rights. Strictly speaking, a declaration is a statement of basic principles of inalienable human rights and imposes only moral, not legal, weight on members. Such declarations, however, often either express already existing norms of customary international law (human rights or otherwise), or, as in the case of the UDHR, may over time crystallize into customary norms. The convention or covenant, on the other hand, was to be drafted in the form of a treaty legally binding on signatories (United Nations, 1949, p. 524ff).

During late 1947 and early 1948, a draft declaration was developed and debated by the Commission. In mid-1948, the Commission presented a draft declaration to the Economic and Social Council. Article 22 of the draft stated (UN, 1948, p. 576):

Everyone has the right to a standard of living, including food, clothing, housing and medical care, and to social services, adequate for the health and well being of himself and his family.

In the final debate over this document, the emphasis was refocused from providing a general standard of living to a more encompassing right to health and well-being. Why was ‘water’ not included in this list? The debate around the wording makes clear that the specific provisions for food, clothing, housing and so on were not meant to be all-inclusive, but representative or indicative of the “component elements of an adequate standard of living” (UN, 1956, p. 216).

In 1948 the United Nations General Assembly approved the universal declaration of human rights (UDHR) by 48 votes, with eight abstentions. The reworded Article 22, now Article 25 of the Declaration, was adopted unanimously and states (UN General Assembly, 1948):

Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing...

Logic also suggests that the framers of the UDHR considered water to be implicitly included as one of the ‘component elements’ — as fundamental as air. Satisfying the standards of Article 25 cannot be done without water of a sufficient quantity and quality to maintain human health and well-being. Meeting a standard of living adequate for the health and well-being of individuals requires the availability of a minimum amount of clean water. Some basic amount of clean water is necessary to prevent death from dehydration, to reduce the risk of water-related diseases and to provide for basic cooking and hygienic requirements. This fact has long been recognized by the World Health Organization and other UN and international aid agencies that specify basic water standards for quantity and quality.

The 1948 Declaration also includes rights that must be considered less fundamental than a right to water, such as the right to work, to protection against unemployment, to form and join trade unions and to rest and leisure (Articles 23 and 24). This further supports the conclusion that Article 25 was intended to implicitly support the right to a basic water requirement.

The Universal Declaration also implies a need for water to grow sufficient food for an adequate standard of living. An important distinction can be made between water for food and the much smaller amount of water required to support the health and well-being of individuals. In particular, the food necessary to meet the rights described in Article 25 can be produced in distant locations and moved to the point of demand. It can thus be argued that the provision of adequate food to satisfy Article 25 does not require local provision of water. This issue has been discussed more completely in the work of Allan (1995) and a final background document to the *Comprehensive Assessment of the Freshwater Resources of the World* (Lundqvist & Gleick, 1997).

As a resolution of the UN General Assembly, the 1948 Human Rights Declaration is not binding on States. As mentioned above, however, many of the provisions of the Declaration are now considered to be customary international law, and the broad human rights found there have since been reasserted in many international documents.

In the 20 years following the UDHR, work continued at the United Nations on the more binding convention, which became two separate Covenants in 1966: the International Covenant on Economic, Social and Cultural Rights (ICESCR) and the International Covenant on Civil and Political Rights (ICCPR). As of January 1999 there were nearly 140 parties to the ICESCR and the ICCPR (Churchill, 1996; Danieli, Stamatopoulou & Diaz, 1999). Under these Covenants, each State would undertake to ensure to all individuals within its jurisdiction certain human rights and adopt “the necessary legislative or other measures to give them practical effect” (United Nations, 1949, p. 538). Article 2(1) of the ICESCR provides that each party to the Covenant

undertakes to take steps, individually and through international assistance and cooperation, especially economic and technical, to the maximum of its available resources, with a view to achieving progressively the full realisation of the rights recognised by the present Covenant by all appropriate means including particularly the adoption of legislative measures.

Work was not completed on the entire agreement until 1966, 18 years after the initial draft was presented for debate (United Nations, 1966). However, 10 years earlier, in 1956, Articles 11 and 12 of the ICESCR addressing the right to an adequate standard of living and human health were both adopted without any dissenting votes (United Nations, 1963). Article 11 formalizes the right to food and some minimum quality of life:

The States Parties to the present Covenant recognize the right of everyone to an adequate standard of living for himself and his family, including adequate food, clothing and housing and to the continuous improvement of living conditions.

Article 12 continues:

The States Parties to the present Covenant recognize the right of everyone to the enjoyment of the highest attainable standard of physical and mental health. The steps to be taken... to achieve the full realization of this right shall include those necessary for... (3) The prevention, treatment and control of epidemic, endemic, occupational and other diseases.

As with the UDHR, access to water can be inferred as a derivative right necessary to meet the explicit rights to health and an adequate standard of life. In their review of major human rights progress over the past 50 years, Danieli, Stamatopoulou & Diaz (1999) support the right to water as implicit in the rights guaranteed by the ICESCR:

There is nothing ill-defined or fuzzy about being deprived of the basic human rights to food and clean water, clothing, housing, medical care, and some hope for security in old age. As for legal toughness, the simple fact is that the 138 governments which have ratified the International Covenant on Economic, Social and Cultural Rights have a legal obligation to ensure that their citizens enjoy these rights.

The International Covenant for Civil and Political Rights (ICCPR) was debated and developed at the same time as the one for Economic, Social and Cultural Rights. Article 6 of the ICCPR states:

Every human being has the inherent right to life. This right shall be protected by law. No one shall be arbitrarily deprived of his life.

Water once again is not explicitly mentioned in the final document of the Covenant, but the right to life implies the right to the fundamental conditions necessary to support life. Referring to the accompanying history and interpretation of the negotiations and discussions surrounding the preparation of the Covenant reveals that the Human Rights Committee (HRC) established by the ICCPR took a broad interpretation of the right to life. In particular,

the HRC called for an inclusive interpretation of this provision that requires States to take positive action to provide the ‘appropriate means of subsistence’ necessary to support life (United Nations, 1989a):

...the right to life has been too often narrowly interpreted. The expression ‘inherent right to life’ cannot properly be understood in a restricted manner, and the protection of this right requires that States adopt positive measures.

The Inter-American Convention on Human Rights and the European Convention on Human Rights also support the requirement that States take positive, proactive steps to support the right to life. Article 2 of the European Convention requires that States have an obligation “not only to refrain from taking life ‘intentionally’ but further, to take appropriate steps to safeguard life” (Churchill, 1996; DRECHR, 1979). Even narrow definitions of Article 6 of the ICCPR interpret it as guaranteeing protection against arbitrary and intentional denial of access to sustenance, including water (Dinstein, 1981; McCaffrey, 1992).

At a minimum, therefore, the explicit right to life, and the broader rights to health and well-being described above must include the right to sufficient water, at appropriate quality, to sustain life. To assume the contrary would mean that there is no right to the single most important resource necessary to satisfy the human rights more explicitly guaranteed by the world’s primary human rights declarations and covenants.

3.2. Explicit support for the human right to water in international statements, agreements and State practice

A second wave of international agreements and examples of State practice offer further evidence of the transition toward an explicit right to water. Beginning in the 1970s, a series of international environmental or water conferences have taken on the issue of access to basic resource needs and rights to water. A series of statements and conclusions from these sources are relevant to this analysis. While these are not legal documents with the same standing as the covenants described above, they offer strong evidence of international intent and policy that inform the views of States.

One of the earliest comprehensive water conferences was the 1977 Mar del Plata conference. The conference statement issued at the close of the meeting explicitly recognized the right to access to water for basic needs (United Nations, 1977):

...all peoples, whatever their stage of development and their social and economic conditions, have the right to have access to drinking water in quantities and of a quality equal to their basic needs.

In recent years, the question of ‘development’ has become more central to overall actions and priorities of the United Nations and other international organizations. Along the way to the Earth Summit in Rio de Janeiro in 1992, the right to development had increasingly come to be considered as a “universal and inalienable right and an integral part of fundamental human rights” (Article 1(10) of the Vienna Declaration, Principle 3 of the Cairo Programme of

Action, Commitment 1(n) of the Copenhagen Declaration and Article 213 of the Beijing Platform of Action) (cited in UNDP, 1998).

In 1986, the United Nations General Assembly adopted the Declaration on the Right to Development (DRD) (United Nations, 1986). Article 8 of the Declaration says:

States should undertake, at the national level, all necessary measures for the realization of the right to development and shall ensure, *inter alia*, equality of opportunity for all in their access to basic resources. . .

In interpreting Article 8 of the DRD, the United Nations explicitly includes water as a basic resource when it states that the persistent conditions of underdevelopment in which millions of humans are “denied access to such essentials as food, water, clothing, housing and medicine in adequate measure” represent a clear and flagrant “mass violation of human rights” (United Nations, 1995). At a minimum, this implies that nations should implement continued and strong efforts to progressively meet these needs to the extent of their available resources, as required by the ISESCR. As noted later, resource limitations should not constrain these efforts in the case of water.

Explicit recognition of water continued with the 1989 Convention of the Rights of the Child (CRC). Article 24 of the CRC, paralleling Article 25 of the Universal Declaration of Human Rights, provides that a child has the right to enjoy the highest attainable standard of health. Among the measures States are to take to secure this right are measures to (United Nations, 1989b):

combat disease and malnutrition. . . through, *inter alia*, . . . the provision of adequate nutritious foods and clean drinking water.

Here for the first time is explicit recognition of the connections between resources, the health of the environment, and human health.

Regional and national conventions and constitutions are also increasingly making the right to basic resources a part of accepted State practice. For example, Article 11 of the American Convention on Human Rights in the Area of Economic, Social, and Cultural Rights of 1988 provides that “Everyone shall have the right to live in a healthy environment and to have access to basic public services” (OASTS, 1988). Although few States have made formal commitments to providing a right to water, more and more of the newer national constitutions discuss either water or the right to a healthy environment. South Africa has recently moved strongly in this direction. The Bill of Rights of the new Constitution of South Africa, adopted in 1994, offers a clear example of State practice relevant to an explicit human right to water. Section 27(1)(b) states: “Everyone has the right to have access to sufficient food and water.” Water policies to implement this right in South Africa are now being developed.

4. Defining and meeting a human right to water

What are the implications of a human right to water? A right to water cannot imply a right

to an unlimited amount of water. Resource limitations, ecological constraints and economic and political factors limit water availability and human use. Given such constraints, how much water is necessary to satisfy this right? Enough solely to sustain a life? Enough to grow all food sufficient to sustain a life? Enough to maintain a certain economic standard of living? Answers to these questions come from international discussions over development, analysis of the human rights literature and an understanding of human needs and uses of water. These lead to the conclusion here that a human right to water should only apply to ‘basic needs’ for drinking, cooking and fundamental domestic uses, described in Gleick (1996).

Both the 1977 Mar del Plata statement and the 1986 UN Right to Development set a goal of meeting ‘basic’ needs. The concept of meeting basic water needs was further strongly reaffirmed during the 1992 Earth Summit in Rio de Janeiro and expanded to include ecological water needs (United Nations, 1992):

In developing and using water resources, priority has to be given to the satisfaction of basic needs and the safeguarding of ecosystems.

More recently, the Comprehensive Assessment of the Freshwater Resources of the World prepared for the Commission on Sustainable Development of the UN (1997b) stated (p. 3):

All people require access to adequate amounts of clean water, for such basic needs as drinking, sanitation and hygiene

and (p. 29):

develop sustainable water strategies that address basic human needs, as well as the preservation of ecosystems

and (p. 25):

it is essential that water planning secure basic human and environmental needs for water.

The UN Convention on the Law of the Non-Navigational Uses of International Watercourses, approved by the General Assembly on May 21, 1997, also explicitly addresses this question of water for basic human needs, including food. Article 10 states that in the event of a conflict between uses of water in an international watercourse, special regard shall be given “to the requirements of vital human needs”. The States negotiating the Convention included in the Statement of Understanding accompanying it an explicit definition that (UN, 1997a):

In determining ‘vital human needs’, special attention is to be paid to providing sufficient water to sustain human life, including both drinking water and water required for production of food in order to prevent starvation.

Article 10 is obligatory. In interpreting Article 10, priority allocation of water in the event of conflicting demands goes to water for basic human needs.

Implicit in the phrase ‘basic needs’ is the idea of minimum resource requirements for certain human and ecological functions and the allocation of sufficient resources to meet those needs. A true minimum human need for water can only be defined as the amount needed to maintain human survival, approximately 3–5 l of clean water per day. However, setting a minimum at this level would have little meaning: except in accidental rare circumstances, no one dies solely from a lack of water and studies show improvement in human health can be realized by increasing amounts of clean water up to about 20 l per person per day (lpcd) (Esrey & Habicht, 1986).

Various international organizations have made recommendations over the years for basic drinking water and sanitation requirements. The US Agency for International Development, the World Bank and the World Health Organization have recommended between 20 and 40 lpcd, each of which excluded water for cooking, bathing and basic cleaning. This is also in line with recommended standards from the UN International Drinking Water Supply and Sanitation Decade and Agenda 21 of the Earth Summit.

Adopting a standard of 5 l of clean water per person per day for drinking water and 20 lpcd for sanitation and hygiene, I earlier recommended a basic water requirement of 25 lpcd to meet the most basic of human needs with an additional 15 lpcd for bathing and 10 lpcd for cooking (Gleick, 1996). International organizations and water providers should adopt an overall basic water requirement (BWR) for meeting these four domestic basic needs, independent of climate, technology, and culture (see Table 1). The recommendation of 50 l per person per day is justifiable and appropriate, but the specific number is less important than the principle of setting a goal and implementing actions to reach that goal. Table 1 also notes the much larger volume of water necessary for growing food, but as others have noted, the right to food is already addressed in the human rights literature and international trade in food can permit this right to be met with water from other regions.

Billions of people lack access to even a basic water requirement of 50 lpcd, though not because of inadequate water availability. Table 2 shows those countries where the average domestic (reported) water use falls below 100 lpcd. Using these data and UN medium population projections, by the year 2000, 2157 million people will live in the 62 countries that report average domestic water use below 50 lpcd. Yet, absolute water *availability* is not the problem: 12 water-short countries have less than 1000 lpcd and only Kuwait reports having a natural renewable freshwater supply of less than 100 l per person per day. Despite its limited

Table 1
A recommended basic water requirement for human domestic needs

Purpose	Recommended commitment (l per person per day)
Drinking water ^a	5
Sanitation services	20
Bathing	15
Food preparation ^b	10

^a This is a true minimum to sustain life in moderate climatic conditions and average activity levels.

^b Excluding water required to grow food. A rough estimate of the water required to grow the daily food needs of an individual is 2700 l.

Table 2
 Countries with an estimated per capita domestic water use below 100 l per person per day (lpcd) for the year 2000^a

Country	2000 Population (millions)	2000 Estimated Domestic lpcd
Gambia	1.24	3
Haiti	7.82	3
Djibouti	0.69	4
Somalia	11.53	6
Mali	12.56	6
Cambodia	11.21	6
Mozambique	19.56	7
Uganda	22.46	8
Tanzania	33.69	8
Ethiopia (and Eritrea)	69.99	9
Albania	3.49	9
Bhutan	2.03	10
Chad	7.27	11
Central African Republic	3.64	11
Congo, DR (formerly Zaire)	51.75	11
Nepal	24.35	12
Rwanda	7.67	13
Lesotho	2.29	13
Burundi	6.97	14
Angola	12.80	14
Bangladesh	128.31	14
Ghana	19.93	14
Benin	6.20	15
Sierra Leone	4.87	15
Guatemala	12.22	15
Myanmar	49.34	15
Papua New Guinea	4.81	17
Burkina Faso	12.06	17
Cape Verde	0.44	17
Sri Lanka	18.82	18
Fiji	0.85	19
Senegal	9.50	20
Niger	10.81	20
Congo	2.98	23
Belize	0.24	23
Guinea-Bissau	1.18	23
Malawi	10.98	24
Jamaica	2.59	24
Nigeria	128.79	24
Madagascar	17.40	26
Honduras	6.49	26
Guinea	7.86	26
Indonesia	212.57	28
Afghanistan	25.59	28
Cote D'Ivoire	15.14	28
Swaziland	0.98	29

(continued on next page)

Table 2 (continued)

Country	2000 Population (millions)	2000 Estimated Domestic lpcd
Liberia	3.26	30
El Salvador	6.32	30
India	1006.77	31
Yemen	18.12	31
Paraguay	5.50	32
Uruguay	3.27	33
Togo	4.68	33
Cameroon	15.13	33
Kenya	30.34	36
Zimbabwe	12.42	38
Laos	5.69	38
Costa Rica	3.80	39
Bolivia	8.33	41
Guyana	0.87	46
Dominican Republic	8.50	48
Equatorial Guinea	0.45	49
Cyprus	0.79	51
Morocco	28.98	51
Pakistan	156.01	55
Thailand	60.50	58
China	1276.30	59
Mongolia	2.74	61
Botswana	1.62	61
Oman	2.72	62
Singapore	3.59	65
Netherlands	15.87	67
Tunisia	9.84	73
Sudan	29.82	73
Zambia	9.13	81
Trinidad and Tobago	1.34	83
Ecuador	12.65	84
Jordan	6.33	94
Gabon	1.24	96
Algeria	31.60	97
Syria	16.13	98

^a These data come from reported domestic water use for various years (from Gleick, 1998) and the United Nations medium 2000 population projections. Improvements are needed in collection of water-use data (see text).

natural endowment, Kuwait provides more than the recommended BWR to its population by supplementing its natural supplies with desalinated water.

There are, of course, problems with the data. Average water-use figures by country are known to be unreliable or outdated. There are few data to indicate the typical *quality* of the water received. Poor quality of domestic water is a severe and widespread problem, and it is likely that many people who receive more than the recommended BWR are getting contaminated and unhealthy water. Several large countries, such as India and China, report that their average domestic water use is very close to 50 l per person per day. In these

countries large segments of populations no doubt receive less than the average, while wealthier portions of the population receive more. There are many countries in Table 2 that are relatively water-rich, suggesting that official data on water withdrawals may miss substantial domestic water use that is self-supplied. Finally, in most of these regions, populations are growing faster than improvements to water availability. Improving the scope, quality and extent of water-use data is vitally important. Notwithstanding these data problems, however, we must conclude that meeting a basic water requirement for all people is constrained by institutional and management failures, not by basic water availability.

4.1. Translating the right to water into specific legal obligations

If we accept that there is a human right to water, to what extent does a State have an obligation to provide that water to its citizens? While the many international declarations and formal conference statements supporting a right to water do not directly require States to meet individuals' water requirements, Article 2(1) of the ICESCR obligates States to provide the institutional, economic and social environment necessary to help individuals to progressively realize those rights. In certain circumstances, however, when individuals are unable to meet basic needs for reasons beyond their control, including disaster, discrimination, economic impoverishment, age or disability, States must provide for basic needs (Gleick, 1996). Meeting this minimum need should take precedence over other allocations of spending for economic development. This will require a redirection of current priorities at international and local levels, and it is likely to require new resources be invested as well.

The overall economic and social benefits of meeting basic water needs far outweigh any reasonable assessment of the costs of providing for these needs. One early estimate was that water-related diseases cost society on the order of US\$125 billion per year (in late 1970 dollars) just in direct medical expenses and lost work time (Pearce & Warford, 1993). Even this estimate excluded costs associated with social disruptions caused by disease, lost educational opportunities for families, long-term debilitation of children or any other poorly quantified or hidden costs. Yet the cost of providing new infrastructure needs for all major urban water sectors has been estimated at around US\$25 to US\$50 billion per year (Christmas & de Rooy, 1991; Jolly, 1998; Rogers, 1997).

While these costs are far below the costs of failing to meet these needs, they are two to three times the average rate of spending for water during the 1980s and 1990s (UN, 1997b). It has been estimated, moreover, that 80% of the investment in the 1980s represents expenditures to meet the needs of a relatively small number of affluent urban dwellers (WSSCC, 1997). Studies on investment alternatives reveal that 80% of the unserved can be reached for only 30% of the costs of providing the highest level of service to all. The WSSCC, for example, estimates that 35,000 rural people could be provided with basic sanitation services for the same cost of providing 1000 urban residents with a centralized sewerage system.

McCaffrey (1992), who supports the conclusion that “in some form, the right [to water] may be inferred under the basic instruments of international human rights law”, argues that the devastating consequences of being denied such water should require that relevant provisions of existing human rights instruments “ought to be interpreted broadly, so as to facilitate the implementation of the right to water as quickly and comprehensively as possible”. McCaffrey

also raised the concern that defining a basic human right to water might have the unintentional effect of causing disputes between neighboring countries that share water: would such a human right require that one State has the right to receive water from another to meet this basic need?

The final statement from the 1997 Convention appears to resolve this question: in the unusual case in which a basic water requirement cannot be met solely from a State's internal water resources, neighboring States do not have the right to deny a co-riparian sufficient water to meet those needs on the grounds that the upstream nation needs the water for economic development. A country is thus not permitted to exploit a shared water resource in a manner that deprives individuals in a neighboring country of access to their basic human needs. In practice, this kind of conflict seems unlikely to arise: in almost all regions of the world absolute water availability is no constraint to meeting these minimal basic needs.

4.2. Consequences of the failure to meet basic needs for water

Many international organizations work to meet the unmet water needs of human populations, including the United Nations, the Water Supply and Sanitation Collaborative Council, the World Bank, international aid organizations such as US AID, the Swedish Agency for Development Cooperation, the Canadian International Development Agency and nongovernmental organizations such as WaterAid and Water for People. These efforts have made significant progress in increasing access to basic water needs for hundreds of millions of people.

Yet, despite these efforts, many water-related problems have worsened. The incidence of cholera soared in the 1990s and expanded in geographic extent. The populations in urban areas without access to clean water and sanitation actually increased between 1980 and 1990, despite great efforts to meet these needs (WHO, 1996). Even more distressing has been the apparent difficulty the world water community has had in setting new targets and goals for meeting basic needs. The world food community has set and continually revised action plans for reducing hunger. The World Food Council met in 1989 in Cairo to propose a specific Programme of Cooperative Action. In that same year, a meeting of food experts in Bellagio, Italy, set nutritional goals for the year 2000, which were reaffirmed at the 1990 UN World Summit for Children. The 1992 UN International Conference on Nutrition laid out a World Declaration and Plan of Action for Nutrition. While huge populations remain undernourished, even less success has been achieved in setting and meeting water-related goals.

While this paper is not the place for a comprehensive discussion of water policy and politics, it seems likely that an appropriate mix of economic, political and social strategies can be developed to reliably provide for basic needs. And despite a growing emphasis on markets, if a 'market' system is unable to provide a basic water requirement, States have responsibilities to meet these needs under the human rights agreements discussed above.

Unless international organizations, national and local governments and water providers adopt and work to meet a basic water requirement standard, large-scale human misery and suffering will continue and grow in the future, contributing to impoverishment, ill-health and the risk of social and military conflict. Ultimately, decisions about defining and applying a basic water requirement will depend on political and institutional will.

5. Conclusions

A communications and computer revolution is sweeping the globe. There is renewed interest in reaching out to outer space. International financial markets and industries are increasingly integrated and connected. And efforts are being made to ensure regional and global security. In this context, our inability to meet the most basic water requirements of billions of people has resulted in enormous human suffering and tragedy and may be remembered as our century's greatest failure.

This paper reviews evidence of international law, declarations of governments and international organizations and State practices and concludes that access to a basic water requirement must be considered a fundamental human right. The major human rights treaties, statements and formal covenants contain implicit and explicit evidence that reinforce the application of rights law in this area. If the framers of early human rights language had foreseen that reliable provision of a resource as fundamental as clean water would be so problematic, it is reasonable now to suggest that the basic rights documents would have more explicitly included a right to water. A formulation appropriate to the existing human rights declarations might be:

All human beings have an inherent right to have access to water in quantities and of a quality necessary to meet their basic needs. This right shall be protected by law.

Would the recognition of the human right to water actually improve conditions worldwide? Perhaps not. The challenge of meeting human rights obligations in all areas is a difficult one, which has been inadequately and incompletely addressed. However, the imperatives to meet basic human water needs are more than just moral: they are rooted in justice and law and the responsibilities of governments. It is time for the international community to reexamine its fundamental development goals. A first step toward meeting a human right to water would be for governments, water providers and international organizations to guarantee all humans the most fundamental of basic water needs and to work out the necessary institutional, economic and management strategies necessary for meeting them.

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