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# Water Scarcity and the Recognition of the Human Right to Safe Freshwater

Elliot Curry\*

## I. INTRODUCTION:

¶1 With constant media attention directed at the impending energy crisis and the search for sustainable solutions, a potentially more threatening issue looms in the background. Every year, millions of people die from a lack of clean, fresh drinking water. Beyond a few scientific journals and United Nations' ("UN") summit publications,<sup>1</sup> major media outlets choose to ignore these staggering figures, focusing their scientific reporting instead on the impending obsolescence of fossil fuels. Water is an essential, life-giving force; its scarcity demands our attention. Even with the coordinated efforts of all nations, future water scarcity may result in a health and financial crisis of unparalleled magnitude.

¶2 Because water is a contributing element to nearly every bodily function, the human body cannot survive for more than a few days without it.<sup>2</sup> From waste disposal to the healthy functioning of the immune system, the body demands safe freshwater for survival.<sup>3</sup> As used in this comment, "fresh" denotes desalinated water, "sufficient" suggests an adequate amount of water for personal needs, and both "clean" and "safe" refer to water free from harmful contaminants.<sup>4</sup>

¶3 Though arguably "one of the greatest threats ever to the survival of our planet,"<sup>5</sup> nations remain unresponsive, and those who seek to raise awareness of the problem are called doomsayers. Water-related diseases, most commonly attributed to water scarcity, have taken more children's lives in the last ten years than the combined deaths of those lost in armed combat worldwide over the last sixty years.<sup>6</sup> Yet water conservation policies rarely extend beyond reducing the frequency of watering lawns or washing cars. Current access to an abundance of water has permitted the western world to turn a deaf ear to the impending crisis. But the escalating issues associated with water scarcity—increasing prevalence of water-related illnesses, famine, and eventual fatalities—will prevent this area of the world from maintaining its apathy.

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<sup>1</sup> GREGG EASTERBROOK, *A MOMENT ON THE EARTH: THE COMING AGE OF ENVIRONMENTAL OPTIMISM* 579 (Penguin Books 1995).

<sup>2</sup> LINDSAY KNIGHT, *THE RIGHT TO WATER* 6 (Gregory Hartl ed., World Health Organization 2003).

<sup>3</sup> *Id.*

<sup>4</sup> ASHFAQ KHALFAN ET AL., *MANUAL ON THE RIGHT TO WATER AND SANITATION* 11 (Maria Katsabanis ed., COHRE, AAAS, SDC and UN-HABITAT 2007).

<sup>5</sup> Maude Barlow & Tony Clarke, *Who Owns Water?*, *The Nation*, Aug. 15, 2002, <http://www.thenation.com/article/who-owns-water>.

<sup>6</sup> KNIGHT, *supra* note 2, at 7.

¶4 Our ecological system constantly replenishes its water supply through its cycle of evaporation and precipitation;<sup>7</sup> yet over eighteen percent of the world's six billion people lack access to clean freshwater.<sup>8</sup> The human rights abuses involved in the perpetuation of ignorance surrounding such a dire circumstance is beyond the scope of this comment—perhaps the human psyche fails to comprehend broad suffering—hence the common reluctance to interfere in past situations of widespread human rights violations. Regardless, the more critical question is, “What can we do now?” This comment seeks to provide global policy suggestions to defeat this immediate worldwide tragedy: first, the paper addresses the current global effects of water scarcity and then focuses on the associated implications; second, though the causes of the current situation are numerous, the paper focuses on the five largest contributing factors, and then address whether any of these causes can be eliminated. Water scarcity is, in part, an implicit repercussion of some of the most deeply entrenched values in Western society; remedies for the problem will involve adopting behaviors in conflict with those very values. The specific steps for a sustainable water policy and any relevant technological changes are beyond the breadth of this comment. Instead, this comment seeks ultimately to advocate for UN recognition of the human right to safe freshwater in an eventual covenant using the United Nation's Committee on Economic, Social and Cultural Rights' General Comment 15 as a template.

## II. CURRENT SITUATION

### A. *Water Use*

¶5 An examination of water consumption data over the past century illuminates a clear trend of abuse.<sup>9</sup> In the last four decades, worldwide water use has doubled to more than 1,700 liters per person per day.<sup>10</sup> Water consumption essentially grows by a factor of two every twenty years.<sup>11</sup> This rate is twice that of global population increases, suggesting that mere increase in population is not a sufficient explanation for the problem.<sup>12</sup> Expansion of Western and modernizing influences are at the root of this discrepancy between consumption and population growth: while societal advances such as greater accessibility to indoor plumbing are partially to blame, the growing industrial demands for water put the most pressure on water resources.<sup>13</sup> Industrial consumption of water accounts for more than ninety percent of total human water use, effectively limiting

<sup>7</sup> KEVIN WATKINS ET AL., HUMAN DEVELOPMENT REPORT 2006 134-35 (Bruce Ross-Larson ed., United Nations Development Programme 2006).

<sup>8</sup> KNIGHT, *supra* note 2, at 7.

<sup>9</sup> See ROSE GEORGE, THE BIG NECESSITY: THE UNMENTIONABLE WORLD OF HUMAN WASTE AND WHY IT MATTERS 227 (Metropolitan Books 2008) (“In 2000, twice as much water was used throughout the world than in 1960.”).

<sup>10</sup> *Id.*

<sup>11</sup> INT'L FORUM ON GLOBALIZATION, THE WTO'S THREATS TO GLOBAL WATER SECURITY: THE GENERAL AGREEMENT ON TRADE IN SERVICES AND BEYOND 1 (2008), *available at* <http://www.ifg.org/pdf/cancun/issues-WTOwater.pdf>.

<sup>12</sup> *Id.*

<sup>13</sup> See KNIGHT, *supra* note 2, at 14 (“[H]ouseholds may use 30 times more water for child hygiene compared with those who have to collect water from a communal source”); see also GEORGE *supra* note 9, at 149 (“[W]ashing a car with a hose used 2.3 gallons of water per minute.”).

the supply available for domestic use.<sup>14</sup> By 2025, industrial water use will be more than 200% greater than 1995 levels.<sup>15</sup> Within industrial applications, agricultural is the largest consumer of water, totaling seventy percent of all human water use.<sup>16</sup>

¶6 The current trend among third world farmers of catering to Western influences (abandoning crops like lentils)<sup>17</sup> and adopting water intensive crops (including biofuel crops like corn) further exacerbates the effects of water use.<sup>18</sup> Along with increased water consumption, the shift in production often leads not only to financial misfortune for the third world farmer, but also the disappearance of a number of species of plant and animal food sources.<sup>19</sup>

¶7 Statistics of water consumption abuse, such as those cited above, are skewed by the actions of the largest consumers (such as the United States),<sup>20</sup> and fail to properly show that a significant portion of the world community still collects water from sources outside the home (including wells, ponds, and rivers).<sup>21</sup> The water consumption of these individuals is dependent upon the distance from the water source to their homes.<sup>22</sup>

“If it is outside the home, but within around 1 kilometer...then about 20 liters per person per day will typically be collected...[If more than 1 kilometer, the likely volumes collected will be] very low, often below 5 liters per capita per day.”<sup>23</sup>

The World Health Organization (“WHO”) recommends a minimum water intake of between two and four and a half liters per person, depending on climate and activity; the WHO also suggests that two additional liters of water are needed for food preparation.<sup>24</sup>

### B. Scarcity

¶8 With a combined total volume of 332 cubic miles, the water sources of the world are one of the most abundant natural resources, making the notion of water scarcity even more confounding.<sup>25</sup> However, of that massive volume of water, only two percent is salt-free, and only one-third of that two percent is available for human use (the rest is

<sup>14</sup> KHALFAN ET AL., *supra* note 4, at 2.

<sup>15</sup> Wail T. Thorne & William L. Thomas, *Issues of Water Scarcity and Right for Multinational Companies*, 18 NAT. RESOURCES & ENV'T 31, 31 (2003).

<sup>16</sup> See KNIGHT, *supra* note 2, at 18.

<sup>17</sup> EASTERBROOK, *supra* note 1, at 589.

<sup>18</sup> See *id.*; Maude Barlow, *Blue Covenant: The Alternative Water Future*, MONTHLY REVIEW, July 2008, <http://www.monthlyreview.org/080818barlow.php>.

<sup>19</sup> See e.g., EASTERBROOK, *supra* note 1, at 589 (“UN estimates that there have been nearly 4000 plant and animal sources throughout history, there are currently just 150.”).

<sup>20</sup> See SHRIDATH RAMPHAL, OUR COUNTRY, THE PLANET: FORGING A PARTNERSHIP FOR SURVIVAL 46 (Island Press 1992) (“Americans use the most water, 2300 cubic meters per capita, per year.”); see also George, *supra* note 8, at 227.

<sup>21</sup> KNIGHT, *supra* note 2, at 12.

<sup>22</sup> See *id.* (“[T]he amount of water collected every day by households is largely determined by how far the source of water is from the home.”).

<sup>23</sup> *Id.* at 12-13.

<sup>24</sup> *Id.* at 17.

<sup>25</sup> GEORGE, *supra* note 9, at 227.

trapped in glaciers).<sup>26</sup> Without implementing costly desalination technology, the world's potable water supply is extremely limited.<sup>27</sup>

¶9 The effects of a limited supply of freshwater are already present: “hot stains,” large areas of disappearing water reserves, are cropping up all over the world.<sup>28</sup> Although the Middle East and Northern Africa receive the most attention with regard to water scarcity, parts of China, nearly two dozen other countries in Africa, and even the United States, suffer from water scarcity.<sup>29</sup> Though current calculations suggest over one billion people worldwide lack access to a safe water supply, the difficulties of collecting data suggest this figure is an underestimate.<sup>30</sup> Without intervention, the situation will continue to deteriorate. By 2025, “as much as two-thirds of the world's population will be living in conditions of serious water shortage and one-third will be living in conditions of absolute water scarcity.”<sup>31</sup> By 2050, the number of those living in conditions of absolute water scarcity will balloon to fifty percent.<sup>32</sup>

### C. Causes

¶10 Factors contributing to water scarcity include: lack of adequate sanitation, industrial pollution, disparity in distribution, climate change, and a rising population.<sup>33</sup>

#### 1. Sanitation

¶11 A lack of adequate sanitation is the most prominent of the five contributing causes, but the attention it receives rarely translates into remedial action.<sup>34</sup> In 2000, contributing members of the UN drafted the Millennium Development Goals, the most intensive efforts to date.<sup>35</sup> Aimed at ensuring that “the proportion of people without access to safe drinking water and basic sanitation is halved by 2015,” the Millennium Development Goals focused primarily on access to water.<sup>36</sup> Unfortunately, current estimates suggest that unless “efforts are greatly accelerated,” the goal will be missed by over seven hundred million people; factoring in this deficit and the expected population growth, nearly 2.5 billion people, mostly the poor, will be left unaddressed.<sup>37</sup>

<sup>26</sup> WORLD WATER ASSESSMENT PROGRAMME, THE UNITED NATIONS WORLD WATER DEVELOPMENT REPORT (Executive Summary), 8 (2003).

<sup>27</sup> Robert Glennon, *The Price of Water*, 24 J. LAND RESOURCES & ENVTL. L. 337, 339 (2004).

<sup>28</sup> Barlow & Clarke, *supra* note 5.

<sup>29</sup> *Id.* (California in particular).

<sup>30</sup> U.N. Comm. on Econ., Soc. and Cultural Rights [CESCR], *Substantive Issues Arising in the Implementation of the Int'l Covenant on Econ., Soc. and Cultural Rights: The Right to Water*, ¶ 1, U.N. Doc. E/C 12/2002/11 (Jan. 20, 2003); *see also* KHALFAN ET AL., *supra* note 4, at 3.

<sup>31</sup> INT'L FORUM ON GLOBALIZATION, *supra* note 11, at 1.

<sup>32</sup> GEORGE, *supra* note 9, at 227.

<sup>33</sup> KHALFAN ET AL., *supra* note 4, at 2.

<sup>34</sup> GEORGE, *supra* note 9, at 67, 227 (“[W]e are wasting our water by putting waste in it.”).

<sup>35</sup> WORLD WATER ASSESSMENT PROGRAMME, *supra* note 26, at 6.

<sup>36</sup> Malgosia Fitzmaurice, *The Human Right to Water*, 18 FORDHAM ENVTL. L. REV. 537, 547 (2007).

<sup>37</sup> U.N. Human Rights Council [HRC], *Promotion and Protection of All Human Rights, Civil, Political, Econ., Social and Cultural Rights, Including the Right to Development: Report of the Independent Expert on the Issue of Human Rights Obligations Related to Access to Safe Drinking Water and Sanitation*, ¶ 5, U.N. Doc. A/HRC/12/24 (Jul. 1, 2009).

¶12 The tight correlation between sanitation and water scarcity (human excreta contaminates water sources and makes them unsafe)<sup>38</sup> suggests that any proposed solution to water scarcity must first account for improving sanitation. There are currently 2.5 billion people without access to adequate sanitation;<sup>39</sup> of those, 1.2 billion continue to practice open defecation, while four in ten defecate in fields used for food production.<sup>40</sup> As long as basic sanitation eludes so many people, offering contaminate-free water to the global population will be impossible. But the mutuality of these two issues complicates any solutions: just as water scarcity cannot be combated without addressing sanitation, sanitation networks cannot be implemented “without water supply schemes”.<sup>41</sup> Sanitation, and therefore water scarcity, will only be improved through funding and public works projects.

¶13 Prior to the Millennium Development Goals, international efforts included the UN declaration of the 1980s as the International Water Supply and Sanitation Decade.<sup>42</sup> The initiative was a strong global movement to provide indoor plumbing and latrines to the neediest communities.<sup>43</sup> Human waste is the most common contaminate of clean water; by providing well-functioning latrines, the UN’s International Water Supply and Sanitation Decade represented a significant step toward clean water.<sup>44</sup> From 1970 to 2004, due in large part to the efforts of the UN’s International Water Supply and Sanitation Decade initiative, one out of every three people in the world gained access to toilets.<sup>45</sup>

¶14 Efforts to address global sanitation are confounded on myriad fronts. On the international level, the political motivation seems present, but the solutions lack the vigor and coordination necessary to effectuate any sufficient change. In the UN confusion impedes progress as “[multiple] agencies are responsible for sanitation,” resulting in no single agency taking the lead.<sup>46</sup> The common problem in the international community seems to be “a surplus of conference activity and a deficit of action.”<sup>47</sup> Efforts among national governments fare no better. Where progress has been made, the national policies are “fragmented” and tend to lack the necessary commitment.<sup>48</sup> Individuals without sanitation disproportionately reside in developing, poor nations, even absent crippling financial impediments,<sup>49</sup> those individuals often lack the political clout to effect any change.

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<sup>38</sup> See *id.* ¶ 33.

<sup>39</sup> See *id.* ¶ 4.

<sup>40</sup> *Id.*; GEORGE, *supra* note 9, at 67.

<sup>41</sup> RAMPHAL, *supra* note 20, at 51.

<sup>42</sup> *Id.* at 52.

<sup>43</sup> See GEORGE, *supra* note 9, at 67 (Initiative led to every 1 out of 3 people gaining access to toilets).

<sup>44</sup> See *id.* at 72 (“[I]t’s hard to supply clean water when clean water is contaminated by overflowing latrines. . .”).

<sup>45</sup> *Id.* at 67-8 (noting that continued efforts stagnated soon after funding decreased).

<sup>46</sup> *Id.* at 68.

<sup>47</sup> *Id.*

<sup>48</sup> U.N. Human Rights Council [HRC], *supra* note 37, ¶ 7.

<sup>49</sup> See RAMPHAL, *supra* note 19, at 132 (“The amount that the developing world has been spending to improve these facilities has been woefully inadequate.”).

## 2. Industrial Pollution

¶15 Industrial pollution also poses a serious threat to water supplies. As with the lack of sanitation, the effects of industrial pollution have been found to disproportionately affect those of a certain income and race.<sup>50</sup> But industrial pollution presents its own distinct set of challenges, most notably accounting for the staggering number of pollutants circulating in our water sources.<sup>51</sup>

¶16 Inadequate or lax environmental policies are the most commonly cited causes of pollution. In China alone, over twenty-five billion tons of unfiltered pollutants were dumped into the waterways in a single year.<sup>52</sup> Though larger nations are most notorious for poor pollution regulation, the issue permeates the policies of the majority of third world nations as well. Most often, the third world nations are ill-equipped to design and implement adequate regulations controlling wastewater and pollution, either because of a lack of oversight or funding. There are countless examples of contaminated water being used for irrigation or being dumped directly into municipal water sources.<sup>53</sup>

¶17 Perhaps the greatest threat stems from deficient regulations controlling the amount of pesticides used in agriculture. To feed an exponentially expanding population, pesticide use has grown by six hundred percent in the last fifty years.<sup>54</sup> When applied to soil, pesticides have a tendency to seep into surrounding water supplies; without proper regulations controlling their use and application, pesticides can taint entire water sources indefinitely.<sup>55</sup> Far more concerning, because of the diffuse nature of the ecological water cycle, one nation's lax internal pollution regulations can have a worldwide effect.

¶18 In nations with established water treatment policies, the concerns are no less daunting. Gaps in coverage and improper wastewater treatment are the most common issues.<sup>56</sup> In the United States, for example, pockets of poor coverage exist across the nation; one in five citizens consumes "untreated water."<sup>57</sup> Even when treated, the concentrated waste stripped from the effluent (wastewater), often referred to as sludge, can pollute entire water sources if disposed of improperly.<sup>58</sup>

¶19 The health consequences of poor sanitation and pollution are enormous. Water and sanitation-related diseases combine to kill a staggering 1.6 million people each year; 25,000 of those deaths occur from mere consumption of contaminated water.<sup>59</sup> In Bangladesh alone, anywhere from twenty-five percent to sixty percent of the population faces the risk of consuming arsenic in the drinking water.<sup>60</sup>

<sup>50</sup> THE REFERENCE SHELF, *THE GLOBAL ECOLOGY* 30 (Edward Moron ed., H.W. Wilson Company 1999).

<sup>51</sup> See GEORGE, *supra* note 9, at 156 ("U.S. industry uses 100,000 chemicals, with 1,000 new chemicals being added each year.").

<sup>52</sup> See EASTERBROOK, *supra* note 1, at 579 (noting that 25 billion tons of pollutant were dumped into Chinese waterways in 1991).

<sup>53</sup> WORLD WATER ASSESSMENT PROGRAMME, *supra* note 26, at 17-18 ("An important source of irrigation water is wastewater, with some 10 percent of total irrigated land in developing countries using this resource...raw sewage is often used directly. . .").

<sup>54</sup> Barlow, *supra* note 18.

<sup>55</sup> *Id.*

<sup>56</sup> THE REFERENCE SHELF, *supra* note 50, at 19.

<sup>57</sup> *Id.*

<sup>58</sup> GEORGE, *supra* note 9, at 156-57.

<sup>59</sup> U.N. Human Rights Council [HRC], *supra* 37, ¶ 4; RAMPHAL, *supra* note 20, at 51.

<sup>60</sup> See KNIGHT, *supra* note 2, at 16 (35-77 million people of the 125 million in Bangladesh).

¶20 Children are the most susceptible to illness. Sanitation and water-related diseases account for up to twenty-five percent of all deaths of children under the age of five;<sup>61</sup> thus, “[e]very eight seconds a child dies from drinking contaminated water.”<sup>62</sup> Diarrhea, the cause of the majority of these deaths, is responsible for more deaths than HIV, TB, or malaria.<sup>63</sup> The World Health Organization has estimated that “88 per cent of diarrheal disease is caused by unsafe water and sanitation.”<sup>64</sup>

¶21 In spite of the insurmountable challenges, the incentive for action is immense: improvements to water supplies and sanitation networks are estimated to result in a seventeen percent reduction in annual cases of diarrhea.<sup>65</sup> Each dollar invested in sanitation is expected to lead to a seven dollar reduction in health care costs; implementing universal sanitation at an initial cost of ninety-five billion dollars would ultimately result in savings of \$660 billion.<sup>66</sup>

### 3. Disparity in Distribution and Climate Change

¶22 The natural inequitable distribution of water sources further contributes to water scarcity. If rain fell in an even pattern, the freshwater pool covering the globe would be eighty centimeters deep,<sup>67</sup> and would be sufficient to meet the demands of the global population.<sup>68</sup> Unfortunately many countries simply do not have access to the water.<sup>69</sup> Water importation plans have been discussed, but the costs involved limit the feasibility of any sort of large-scale implementation.<sup>70</sup> Unpredictable weather patterns, which often induce droughts, only worsen conditions in water-scarce countries.<sup>71</sup> The effects of global warming, while increasing the precipitation in areas less affected by water scarcity, continue to reduce rainfall in areas already in need.<sup>72</sup> Dry areas will continue to face the brunt of the long-term effects of global warming, but no nation will be immune. Estimates suggest that climate change will lead to a twenty percent increase in water scarcity across the globe.<sup>73</sup>

¶23 The deleterious effects of climate change will also extend to water quality. Water temperatures will rise, which will cause pollution concentrations to increase.<sup>74</sup>

<sup>61</sup> U.N. Human Rights Council [HRC], *supra* 37, ¶ 4

<sup>62</sup> Barlow & Clarke, *supra* note 5.

<sup>63</sup> EASTERBROOK, *supra* note 1, at 579 (To put this into perspective, death from diarrhea is as rare as a dying from a comet strike in the first world); George, *supra* note 9, at 67.

<sup>64</sup> U.N. Human Rights Council [HRC], *supra* 37, ¶ 23.

<sup>65</sup> WORLD WATER ASSESSMENT PROGRAMME, *supra* note 26, at 11.

<sup>66</sup> GEORGE, *supra* note 9, at 72.

<sup>67</sup> RAMPHAL, *supra* note 20, at 44 (“[P]roblem is that it falls unevenly.”).

<sup>68</sup> Eyal Benvenisti, *Collective Action in the Utilization of Shared Freshwater: The Challenges of International Water Resources Law*, 90 AM. J. INT’L L. 384, 384 (1996) (“There is enough freshwater in the world to meet the existing and future needs of the world’s population. Water, however, is poorly distributed. . . .”).

<sup>69</sup> *Id.*

<sup>70</sup> Katsumi Matsuoka, *Tradable Water in GATT/WTO Law: Need for New Legal Frameworks?*, in GLOBALIZATION AND WATER RESOURCES MANAGEMENT: THE CHANGING VALUE OF WATER 2 (2001).

<sup>71</sup> See Benvenisti, *supra* note 68, at 384.

<sup>72</sup> See WORLD WATER ASSESSMENT PROGRAMME, *supra* note 26, at 10 (“Precipitation will probably increase from latitudes 30 degrees N and 30 degrees S...many tropical and sub-tropical regions will probably get lower and more erratic rainfall.”).

<sup>73</sup> *Id.*

<sup>74</sup> *Id.* (“[W]ater quality will undoubtedly worsen, because of increased pollution loads and concentrations

Food production will also be affected, “exposing an additional 75-125 million people to the threat of hunger.”<sup>75</sup> While there are few alternatives for addressing this issue without implementing wide-scale emissions legislation, water-stressed nations can make great strides by reducing industrial consumption and focusing on meeting the consumption needs of private individuals.<sup>76</sup>

¶24 The final component contributing to water scarcity is the growing population. Each year the world’s population increases by eighty-five million people.<sup>77</sup> By 2100, the population will reach ten billion.<sup>78</sup> Supplying the water necessary for the survival of the entire population will jeopardize water resources around the world.

¶25 As the population grows, ensuring all individuals have access to water supplies is another concern. The continuing urbanization trend around the world presents serious difficulties. From 1950-1985, the population “living in urban areas doubled,” and “urban services have not kept up.”<sup>79</sup> While forty-eight percent of the population currently lives in urban areas, this percentage is expected to rise to sixty percent by 2030.<sup>80</sup> Expansion of water and sanitation infrastructure in urban areas is expensive, and there is a general tendency for governments to avoid addressing these kinds of costly issues.<sup>81</sup> It is estimated that at least a trillion dollars is needed to update the water systems in the United States alone.<sup>82</sup>

#### 4. Food Production

¶26 Population increase necessarily requires increased food production. To supply one person with 2800 calories per day, one thousand cubic meters of water are needed.<sup>83</sup> It is estimated that within thirty years, a fourteen percent increase in freshwater will be needed to supply the expected twenty percent growth in irrigated land.<sup>84</sup> A total transformation of agricultural practices will also have to accompany the growth. Unmanaged agricultural systems (the earth’s natural growth absent human involvement) can only feed approximately five hundred million people.<sup>85</sup> The agricultural tactics implemented today feed more than six billion people: “Between 1900 and 1950, the world’s irrigated land area almost doubled to 94 million hectares...[from 1950 to 1990] the area expanded by over 150 million hectares...”<sup>86</sup> Further adaptations will be required

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and higher water temperatures.”).

<sup>75</sup> WATKINS ET AL., *supra* note 7, at 15.

<sup>76</sup> See THE REFERENCE SHELF, *supra* note 50, at 32 (Industrialism often takes precedence in water allocation).

<sup>77</sup> Barlow & Clarke, *supra* note 5.

<sup>78</sup> Matsuoka, *supra* note 70, at 1.

<sup>79</sup> Karen Bakker, *Archipelagos and Networks: Urbanization and Water Privatization in the South*, 169 GEOGRAPHICAL JOURNAL 328, 334 (2003).

<sup>80</sup> WORLD WATER ASSESSMENT PROGRAMME, *supra* note 26, at 15.

<sup>81</sup> See, e.g., Bakker, *supra* note 79, at 332 (Water systems were built at outdated peak loads; “[G]overnments unwilling to support rural-urban transition.”).

<sup>82</sup> Glennon, *supra* note 27, at 338.

<sup>83</sup> WORLD WATER ASSESSMENT PROGRAMME, *supra* note 25, at 17.

<sup>84</sup> *Id.*

<sup>85</sup> *Id.*

<sup>86</sup> RAMPHAL, *supra* note 20, at 45-46.

to feed the ten billion people expected by 2100; consequences of those adaptations will be numerous.<sup>87</sup>

¶27 The effects of factory farming and flood irrigation have already taken their toll on many nations' water supplies.<sup>88</sup> For example, the increase in irrigation in Russia has led to a sixty-six percent drop in volume in the Aral Sea.<sup>89</sup> To keep up with demand, poorer farmers will be forced to "overexploit" their land and water supplies.<sup>90</sup>

## 5. Foreign Policy

¶28 The growing population will also influence the foreign policy strategies adopted by nations throughout the world. Control of water sources will become an increasing form of leverage; because most sources extend beyond a single nation's borders, disputes over control of riparian rights will escalate.<sup>91</sup> In these situations, the management of water sources mirrors the prisoner's dilemma game.<sup>92</sup> Cooperation around sustainable uses of a water source shared between nations would ensure long-term continual use, but this strategy would impose costs on both nations. Rather than cooperating and assuming the costs together, the expected outcome is for both nations to defect.<sup>93</sup> The Middle East and Northern Africa have already erupted in conflict over water sources; as water scarcity becomes more prevalent, these conflicts will only intensify. "[T]he wars of the next century will be about water."<sup>94</sup>

### *D. Most Affected*

¶29 Water scarcity will have the worst impact on those groups least able to handle its effects. Eighty percent of those without access to adequate water sources are the rural poor,<sup>95</sup> and that lack of access perpetuates the cycle of poverty. The poor pay more than their wealthier counterparts for adequate drinking water, further exacerbating their dire

<sup>87</sup> See Matsuoka, *supra* note 70, at 1 (10 billion people).

<sup>88</sup> Barlow & Clarke, *supra* note 5 ("[F]actory farming, flood irrigation...have damaged the Earth's surface water so badly that we are now mining the underground water reserves far faster than we can replenish them").

<sup>89</sup> RAMPHAL, *supra* note 20, at 45.

<sup>90</sup> *Id.* at 133.

<sup>91</sup> See Benvenisti, *supra* note 68, at 384 ("Such management inevitably brings into play the competing priorities of different uses and users...").

<sup>92</sup> Timothy Killingback & Michael Doebeli, *The Continuous Prisoner's Dilemma and the Evolution of Cooperation through Reciprocal Altruism with Variable Investment*, 160 AM. NATURALIST 421, 423 (2002) ("The prisoner's dilemma is a symmetric two-person game that illustrates well the paradox surrounding the evolution of cooperation. Each player in the prisoner's dilemma has two possible strategies: cooperate and defect...while there is an advantage to cheating over cooperating, mutual cooperation is more profitable than mutual defection. It follows directly from the structure of the game that...natural selection will always favor defectors.")

<sup>93</sup> See Benvenisti, *supra* note 68 at 389 ("[Prisoner's Dilemma] games can be associated with several issues of water utilization and management. Take the example of two riparians that draw water from a shared lake or aquifer. They can cooperate by keeping withdrawals lower than the replenishment rate and by preventing pollution of the resource. Cooperation involves certain costs, but ensures sustainable use of the resource...the sustainability of the resource depends on the riparians' cooperation...the dominant strategy of both riparians would be to defect.")

<sup>94</sup> RAMPHAL, *supra* note 20, at 47; Int'l Forum on Globalization, *supra* note 10, at 1.

<sup>95</sup> KNIGHT, *supra* note 2, at 22.

economic situation.<sup>96</sup> In addition, “[p]oor people are less able to cope with the negative health consequences of poor water and sanitation.”<sup>97</sup> Illness prevents participation in income generating activity or attendance at school, and often further frustrates any possibility of advancement.<sup>98</sup> Even minor changes, like providing adequate drinking water and sanitation at schools, improves attendance rates and reduces dropout rates.<sup>99</sup>

¶30 The other demographic group most affected by water scarcity is women. Nearly seventy percent of those “living in extreme poverty are women,” and women perform “80% of water-related work,” i.e., collecting and transporting.<sup>100</sup> Collecting water is a very dangerous obligation: women are not only exposed to contaminated water sources, but they also face risks of injury and violence as they journey to and from collection sites.<sup>101</sup> Carrying buckets of water, often miles at a time, also takes a physical toll on women’s bodies.<sup>102</sup>

### III. SOLUTIONS

¶31 Despite these many grim statistics and warnings, there is reason for hope. If distributed appropriately, enough safe freshwater exists to satisfy the personal and domestic needs of the global population.<sup>103</sup> The difficulty lies in forming policies that will reflect a worldwide consensus. Regardless of which approach is taken, any solution must address the three following areas: rainwater must “remain in local watersheds,” underground water cannot be extracted at a rate beyond the replenishment rate, and pollution of water sources cannot continue.<sup>104</sup>

¶32 Experts disagree as to whether privatization of water resources or establishing a human right to water is the appropriate course of action. While the two are not mutually exclusive, the tenets of privatization often conflict with those of supporting a global right to water. Capitalism is the motivation behind privatization, but is also one of the contributing factors to water scarcity.<sup>105</sup> The recognition of the right to safe freshwater is difficult to reconcile with capitalism.

#### A. Privatization

¶33 Privatization of water resources first gained momentum in 1987 after the World Bank, attempting to fix the supply in Manila, focused on the city’s water infrastructure.<sup>106</sup> The outcome was disastrous (“despite repair attempts, water loss was as

<sup>96</sup> See *id.* at 16-24 (“[T]he poor pay on average 12 times more per liter”; “because the poor often work as daily labourers, they immediately lose pay if they are too ill to work.”).

<sup>97</sup> See KHALFAN ET AL., *supra* note 4, at 6.

<sup>98</sup> *Id.* at 6-7.

<sup>99</sup> KNIGHT, *supra* note 2, at 7.

<sup>100</sup> *Id.* at 25; Barlow, *supra* note 18, at 129 (“Because they perform so many of the water related activities, they bear the brunt of the water inequity.”).

<sup>101</sup> KNIGHT, *supra* note 2, at 25.

<sup>102</sup> *Id.* at 15, 25.

<sup>103</sup> KHALFAN ET AL., *supra* note 4, at 2.

<sup>104</sup> Barlow, *supra* note 18, at 126-27.

<sup>105</sup> See THE REFERENCE SHELF, *supra* note 50, at 31 (“[T]he ecological crisis is most immediately a product of capitalism.”).

<sup>106</sup> John Tagliabue, *As Multinationals Run the Taps, Anger Rises Over Water for Profit*, N.Y. TIMES, Aug. 26, 2002, available at <http://www.nytimes.com/2002/08/26/international/americas/26WATE.html>.

high as 64%”), but the profits caused privatization to spread.<sup>107</sup> In Argentina, Buenos Aires soon privatized its water supply, followed by parts of Bolivia, Poland, Chile, and England.<sup>108</sup>

¶34

Although only ten percent of the world’s water supplies (serving seven percent of the population)<sup>109</sup> have been privatized, the accumulated profits are immense.<sup>110</sup> The water supply industry is a one trillion dollar business;<sup>111</sup> corporations involved in the industry amass over two-hundred billion dollars in yearly profits.<sup>112</sup> However, there are very high initial costs associated with entering the water industry, most notably related to the development of infrastructure and transportation. This begs the question: if a corporation assumes the financial risk associated with a water infrastructure project, is the corporation not entitled to a suitable return? Substantial initial costs also serve as a barrier of entry into the market. Further, the large amount of capital necessary to embark on a water infrastructure project causes the water industry to be “highly susceptible to monopolistic control.”<sup>113</sup> Only a handful of companies actually participate in the water industry; seventy percent of the market is controlled by two French corporations, ONDEO and Vivendi.<sup>114</sup> Water privatization is so deeply entrenched in the water industry that it is growing increasingly difficult for governments to secure loans for water projects from organizations like the World Bank without some sort of private participation.<sup>115</sup> Once corporations are included in projects, they often operate on a “concession” basis: they require exclusive control of the water supply infrastructure.<sup>116</sup>

### 1. Advantages of Privatization

¶35

Support for privatization stems from financially over-burdened governments in the developing world often being ill-equipped to implement the adequate improvements to their water and sanitation infrastructures.<sup>117</sup> Even those with adequate financial resources often lack the political will to assume so much risk.<sup>118</sup> Privatization allows governments that have failed to provide adequate water to award contracts to corporations, effectively shifting the risk and financial burden.<sup>119</sup> Municipalities are under the greatest amount of pressure to recover the cost of public works projects: developing and maintaining water infrastructure is capital-intensive and slow to recover

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<sup>107</sup> *See id.*

<sup>108</sup> Bakker, *supra* note 79, at 328-29.

<sup>109</sup> Tagliabue, *supra* note 106.

<sup>110</sup> Joshua Holland, *On Tap at the WTO: Private Water*, ALTERNET (Dec. 15, 2005), available at <http://www.alternet.org/story/29639/>.

<sup>111</sup> Barlow & Clark, *supra* note 5.

<sup>112</sup> Tagliabue, *supra* note 106.

<sup>113</sup> Bakker, *supra* note 79, at 328.

<sup>114</sup> *See id.* at 329-30 (Suez Lyonnaise des Eaux is a division of ONDEO, and Generale Des Eaux is a division of Vivendi).

<sup>115</sup> Bakker, *supra* note 79, at 335.

<sup>116</sup> *Id.* at 329.

<sup>117</sup> Tagliabue, *supra* note 106.

<sup>118</sup> *See id.* (“[T]he private contractors commit little of their own capital, relying instead on municipalities themselves, private lenders like banks, an international development organizations like the World Bank or regional development banks.”).

<sup>119</sup> *Id.*

costs.<sup>120</sup> There is a huge incentive for risk-averse governments to defer or transfer this obligation to private firms. Additionally, supporters claim privatization would promote conservation and improve efficiency of resources. Placing a high enough price on the resource will ensure only the most vital of applications are implemented. Under free market principles, ownership of water rights will lead to the creation of a sort of equilibrium price suitable to the needs and desires of all entities within the market.

## 2. Disadvantages of Privatization

¶36 There is an inherent assumption among supporters of privatization that governments are poorly managed and cannot provide clean freshwater in an efficient manner.<sup>121</sup> These supporters suggest that competition in the industry will lead to more efficient management than the public sector can offer.<sup>122</sup> The real world evidence contradicts this assumption. Not only do free market principles ignore the transaction costs,<sup>123</sup> but privatized systems often charge more, leaving those who cannot afford the increase without service.<sup>124</sup> In Bolivia, privatization increased water prices by thirty-five percent,<sup>125</sup> and in the UK, by 106%. In both countries, the increase in rates was accompanied by a loss of service among large portions of the population.<sup>126</sup>

¶37 Beyond imposing higher rates, corporations are also inclined to maximize profits by “cherry picking” customers.<sup>127</sup> There is a general tendency to focus on serving urban areas (where a concentrated population density allows for easier implementation and lower costs) while neglecting the diffuse populace in rural areas.<sup>128</sup> The poor are also commonly denied service outright.<sup>129</sup>

¶38 The inherent problems associated with privatization stem from the drive to maximize profits. Corporations cannot remain competitive by following the ideals necessary to eradicate water scarcity: granting all members of the global community access to safe freshwater is often not cost effective.<sup>130</sup> Because corporations are profit-driven, they have less concern for “the environmental impact of providing water,”<sup>131</sup> whether the water is provided in a sustainable manner, or the associated costs for third parties.<sup>132</sup> Privatization requires active government supervision in order to be facilitated in an equitable and effective manner. Many nations, especially in the developing world, are unwilling to assume that role.

<sup>120</sup> KHALFAN ET AL., *supra* note 4, at 157.

<sup>121</sup> Bakker, *supra* note 79, at 335.

<sup>122</sup> *Id.*

<sup>123</sup> Stephen E. Draper, *The Unintended Consequences of Tradable Property Rights to Water*, 20 NAT. RESOURCES & ENV'T 49, 51 (2005).

<sup>124</sup> See INT'L FORUM ON GLOBALIZATION, *supra* note 11, at 2.

<sup>125</sup> Robert Glennon, *Water Scarcity, Marketing, and Privatization*, 83 TEX L. REV. 1873, 1890 (2005).

<sup>126</sup> INT'L FORUM ON GLOBALIZATION, *supra* note 11, at 2 (“Bolivia: Families earning a minimum wage of \$60 per month suddenly faced water bills of \$20 per month.”).

<sup>127</sup> See Bakker, *supra* note 79, at 329.

<sup>128</sup> See *id.* at 333 (“Annual investment in urban water supply in Africa, Asia, Latin America, and the Caribbean over the decade 1990-2000 was just under US \$8 billion....[A]nnual investment in rural water supply was significantly smaller at just over \$4.5 billion.”).

<sup>129</sup> *Id.* at 329.

<sup>130</sup> See Barlow, *supra* note 18.

<sup>131</sup> Glennon, *supra* note 125, at 1894.

<sup>132</sup> *Id.* at 1889.

¶39 Financial inequities are inherent to any market system. Due to disparities in wealth or access, some individuals are placed in more fortunate positions. Over time, instead of countering these disparities, the market nurtures them. Unlike other commodities, like wheat or oil, water is essential for survival, and it does not have any substitutes. Limited or nonexistent access to grain or oil, while potentially devastating, is not life threatening. The traditional economic principles applied to other commodities are not applicable to water. Those unable to afford the market's price for water would be left to die.

¶40 The ideals of capitalism do not support the necessary steps for combating water scarcity. Thus, privatization will likely never serve as a solution.<sup>133</sup>

### *B. Right to Clean Freshwater*

¶41 The first step in forming a solution to water scarcity is the recognition of the human right to water. Without treaties or covenants in place defining and regulating water use and obligations, private organizations have assumed an ever-increasing role both in ownership and distribution of the resource.<sup>134</sup> The lack of any government foresight has led to the rise in privatization over the past few decades.<sup>135</sup> Often diametrically opposed to the ideals of privatization, the human right to water “entitles everyone to sufficient, safe, acceptable, physically accessible, and affordable water for personal and domestic uses.”<sup>136</sup>

¶42 The right to safe freshwater, like all other human rights, is derived from a basic acknowledgment of the dignity of all human beings.<sup>137</sup> This dignity, first mentioned in the Universal Declaration of Human Rights (“UDHR”), stands as the “minimum definition of what it means to be human in any morally tolerable form of society.”<sup>138</sup> Lack or denial of access to clean freshwater, essentially the bedrock of survival, does not meet this minimum standard of dignity, nor is it morally tolerable. A UN covenant recognizing the human right to water will not solve water scarcity by itself, but it will establish the framework necessary for implementing any solution.<sup>139</sup> A human right to water would place human survival atop the hierarchy of water allocation, thereby ensuring that industrial applications do not take precedence and that those who disrupt access to clean freshwater are held accountable.

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<sup>133</sup> See INT’L FORUM ON GLOBALIZATION, *supra* note 11, at 4 (“Economic globalization’s values of unlimited growth and increased global trade are totally incompatible with the search for solutions to water scarcity. Designed to reward the strongest and most ruthless, economic globalization undermines local communities by allowing for easy mobility of capital and theft of local resources.”).

<sup>134</sup> See MAUDE BARLOW, THE BLUE PLANET PROJECT, THE RIGHT TO WATER: THE CAMPAIGN FOR A UNITED NATIONS TREATY (2008) (“In the absence of a legally binding treaty or convention, however, the decision-making power over water has slowly moved away from the United Nations to the World Water Council, the World Bank and other regional banks, trade institutions like the World Trade Organization, and the big water transnationals.”).

<sup>135</sup> *Id.*

<sup>136</sup> U.N. Comm. on Econ., Soc. and Cultural Rights [CESCR], *supra* note 30, ¶ 2.

<sup>137</sup> See U.N. Human Rights Council [HRC], *supra* note 37, ¶ 56 (“[A]rticle 22, which states that “everyone ... is entitled to realization ... of the economic, social and cultural rights indispensable for his dignity. . . .”).

<sup>138</sup> *Id.* ¶ 57.

<sup>139</sup> Maude Barlow, *A UN Convention on the Right to Water: An Idea Whose Time has Come*, BLUE PLANET, Nov. 2006, at 3.

¶43 The statement of the right would provide a specific allocation of water per person per day (a minimum of 20 liters),<sup>140</sup> and would establish clean freshwater as a legal entitlement of every man, woman, and child,<sup>141</sup> thereby elevating water to a level above that of a traditional commodity (such as wheat or oil).<sup>142</sup> Because governments would be monitored and forced to comply with the associated legal obligations, the right would also create the political will to serve those typically ignored.<sup>143</sup> Further, an official statement of such a right would draw international attention to scarcity issues, and would grant individuals the ability to “hold their governments accountable” for any water service-related issues.<sup>144</sup>

### 1. Concerns

¶44 It is important to recognize that establishing the right to water does not ease the burden of forming practical policies. Another concern is whether the adequate legal framework is in place to enforce the right in any given country. Many countries are unfamiliar with international law or uncomfortable hearing cases involving “social rights and ordering specific remedies.”<sup>145</sup> Of the nations that have drafted the right to water into their constitutions or legislation, many fall short of realizing and protecting the right for their citizens.

¶45 South Africa first recognized the right to water in its Reconstruction and Development Plan;<sup>146</sup> in 2001, it ensured adequate access in its Free Basic Water policy, which guarantees every person twenty-five liters of water per day.<sup>147</sup> Unfortunately, large discrepancies in coverage exist around the country:<sup>148</sup> on average “wealthy, mostly white South Africans...use 600 litres per person per day...poor and largely black residents... 10...”<sup>149</sup> The African Charter serves as another example of exceptional foresight, but poor implementation.<sup>150</sup> Nonetheless, despite some tribulations, recognition of the right to water is the best opportunity to thwart scarcity and its effects: Bolivia and Uruguay have both included the right in their constitutions, and have improved access for large portions of their populations.

### 2. Progression of Right

¶46 Movement toward UN recognition of the right to clean freshwater began in 1946, when the World Health Organization adopted its constitution, declaring that “the

<sup>140</sup> WATKINS ET AL., *supra* note 7, at 60.

<sup>141</sup> KNIGHT, *supra* note 2, at 9.

<sup>142</sup> Barlow, *supra* note 139, at 2.

<sup>143</sup> See KNIGHT, *supra* note 2, at 9. (“[T]he least served are better targeted and therefore inequalities decreased; communities and vulnerable groups will be empowered to take part in decision-making processes...”).

<sup>144</sup> Barlow, *supra* note 139, at 3.

<sup>145</sup> KHALFAN ET AL., *supra* note 4, at 49-50.

<sup>146</sup> Bakker, *supra* note 78, at 331.

<sup>147</sup> Dinara Ziganshina, *Rethinking the Concept of the Human Right to Water*, 6 SANTA CLARA J. INT’L L. 113, 118-19 (2008).

<sup>148</sup> Bakker, *supra* note 79, at 331.

<sup>149</sup> *Id.* at 333.

<sup>150</sup> See KHALFAN ET AL., *supra* note 4, at 54 (“Article 14(2)(c): to ensure the provision of adequate nutrition and safe drinking water”).

enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being.”<sup>151</sup> The next successive stride occurred with the adoption of the UDHR in 1948. Reiterating much of the same language and ideals espoused in the World Health Organization’s constitution, the UDHR included the “right to a standard of living adequate for health and well-being for himself and of his family...including food....”<sup>152</sup> The right to water was not addressed in either document, and it is speculated that many of the issues involving water scarcity stem from this omission.<sup>153</sup>

¶47 The next great step in recognition took place with the UN’s adoption of the International Covenant on Economic, Social and Cultural Rights (“ICESCR”) in 1966.<sup>154</sup> Aimed at protecting the basic rights of individuals, the ICESCR established “the right of everyone to the enjoyment of the highest attainable standard of physical and mental health.”<sup>155</sup> Unfortunately, this covenant not only failed to recognize the right to water, it also lacked an accompanying committee to enforce its regulations.<sup>156</sup>

¶48 The creation of the Committee on Economic, Social and Cultural Rights (“CESCR”) in 1985 rectified this enforcement problem.<sup>157</sup> Composed of a small body of elected experts, the CESCR is responsible for monitoring the adherence of states parties to the principles listed in the ICESCR.<sup>158</sup> The CESCR requires reports about implementation from all states parties “within two years of accepting the Covenant and thereafter every five years.”<sup>159</sup> The CESCR also has the responsibility to issue General Comments about potential improvements and upcoming issues related to states parties’ implementation of the ICESCR.<sup>160</sup> Although the CESCR’s General Comments are merely “authoritative interpretations” of the ICESCR, the issues addressed serve as a sort of barometer of the international sentiment.<sup>161</sup>

¶49 The CESCR’s efforts have produced the greatest strides toward the realization of the right to water. In 2000, the CESCR adopted General Comment 14, which, though neither authoritative nor included in the ICESCR, addressed the general right to health and articulated a right to all the elements which determine “good health,” notably clean drinking water.<sup>162</sup>

<sup>151</sup> KNIGHT, *supra* note 2, at 8.

<sup>152</sup> Universal Declaration of Human Rights, G.A. Res. 217A, at 76, U.N. Doc. A/810 (Dec. 12, 1948).

<sup>153</sup> Barlow, *supra* note 18.

<sup>154</sup> International Covenant on Economic, Social and Cultural Rights, G.A. Res. 2200A (XXI), Supp. No. 16, U.N. Doc. A/6316 (December 16, 1966), available at <http://www2.ohchr.org/english/law/pdf/cescr.pdf>.

<sup>155</sup> *Id.* art. 12.

<sup>156</sup> *See id.*

<sup>157</sup> Michael J. Dennis & David P. Stewart, *Justiciability of Economic, Social, and Cultural Rights: Should there be an International Complaints Mechanism to Adjudicate the Rights to Food, Water, Housing, and Health?*, 98 AM. J. INT’L L. 462, 488 (2004).

<sup>158</sup> G.A. Res. 2200A (XXI), *supra* note 154, art. 11-12.

<sup>159</sup> Office of the U.N. High Comm’r for Human Rights, *Monitoring the Economic, Social and Cultural Rights* (2009), available at <http://www2.ohchr.org/english/bodies/cescr/>.

<sup>160</sup> *See* G.A. Res. 2200A (XXI), *supra* note 154, art. 21 (“The Economic and Social Council may submit from time to time to the General Assembly reports with recommendations of a general nature and a summary of the information received from the States Parties to the present Covenant and the specialized agencies on the measures taken and the progress made in achieving general observance of the rights recognized in the present Covenant”).

<sup>161</sup> Barlow, *supra* note 18.

<sup>162</sup> KNIGHT, *supra* note 2, at 8 (“[I]nterprets the right to health (art. 12) as an inclusive right that extends...to timely and appropriate health care.”).

### 3. General Comment 15

¶150 The CESCR's most recent evolution of an articulation of a right to water comes in the form of General Comment 15, adopted in 2002.<sup>163</sup> Like its predecessor, General Comment 15 is not authoritative, but it serves as the most progressive interpretation of the ICESCR with respect to water rights. It is the first instance of a UN body specifically suggesting that the right to water is essential to the realization of the rights enumerated in the ICESCR.<sup>164</sup>

“Water is required for a range of different purposes...to realize many of the Covenant rights. Water is necessary to produce food (right to adequate food) and ensure environmental hygiene (right to health). Water is essential for securing livelihoods (right to gain a living by work)....”<sup>165</sup>

General Comment 15 suggests that since the word “including” preceded the list of rights mentioned in the ICESCR, those rights were “not intended to be exhaustive.”<sup>166</sup> Under this rational interpretation, since the right to water is a natural extension of those rights listed in the ICESCR, recognition of the right to water is as essential as all others mentioned.

¶151 General Comment 15 stands as the model for any future freestanding covenant or addendum to the ICESCR regarding water rights. It focuses on three particular areas: availability, quality, and accessibility.<sup>167</sup> In context, “availability” indicates that “the water supply for each person must be sufficient and continuous for personal and domestic uses;” “quality” suggests that “the water required for each personal or domestic use must be safe;” and “accessibility” means that “water and water facilities and services have to be accessible to everyone without discrimination.”<sup>168</sup> General Comment 15 further defines accessibility by addressing “physical accessibility,” requiring that water sources be within a safe distance, and “economic accessibility,” requiring that water supplies be affordable.<sup>169</sup> The right to water does not force countries to provide the resource for free, but it does mandate that water be affordable and priced at a point that aids in conservation.<sup>170</sup> Some experts suggest staggering the price of water, thereby placing a greater burden on commercial industry to fund water infrastructure projects, but General Comment 15 neglects to address this issue.<sup>171</sup> A corollary to both features of accessibility is General Comment 15's prohibition against any discrimination to providing access to water sources.<sup>172</sup> General Comment 15 focuses on providing access

<sup>163</sup> Barlow, *supra* note 134 (“Committee speaks out against the commercialization and commodification of water and clarifies that an international human rights law would take precedence over international trade law.”).

<sup>164</sup> U.N. Comm. on Econ., Soc. and Cultural Rights [CESCR], *supra* note 30, ¶ 6.

<sup>165</sup> *Id.*

<sup>166</sup> *Id.* ¶ 3.

<sup>167</sup> *Id.* ¶ 12.

<sup>168</sup> *Id.*

<sup>169</sup> *Id.*

<sup>170</sup> INT'L FORUM ON GLOBALIZATION, *supra* note 11, at 4.

<sup>171</sup> *Id.*

<sup>172</sup> U.N. Comm. on Econ., Soc. and Cultural Rights [CESCR], *supra* note 30, ¶ 12.

to groups who have been marginalized in the past, namely the poor and women, and providing them with a role in the water policy decision-making processes.<sup>173</sup>

¶52 The most important feature of General Comment 15 is its awareness and articulation of both freedoms and entitlements:<sup>174</sup> freedoms entailing the right to access water sources and be free from interference, and entitlements suggesting the “[equal] opportunity for people to enjoy the right to water.”<sup>175</sup> Both are vital to the welfare of a population; both accordingly need to be integrated into any eventual right to water.

¶53 General Comment 15 does not offer much guidance regarding the implementation of the right to water, but if the language were to be adopted into the covenant,<sup>176</sup> governments will be required to act in an expeditious and effective manner.<sup>177</sup> As soon as States parties acknowledged the right, they would be required to immediately meet nine core responsibilities.<sup>178</sup> Of the nine, the most critical are:

- (1) To ensure access to the minimum essential amount of water, that is sufficient and safe for personal and domestic uses to prevent disease;
- (2) To ensure the right of access to water and water facilities and services on a non-discriminatory basis;
- (3) To ensure physical access to water facilities or services that provide sufficient, safe and regular water;
- (4) To ensure equitable distribution of all available water facilities and services;
- (5) To take measures to prevent, treat and control diseases linked to water, in particular ensuring access to adequate sanitation.<sup>179</sup>

¶54 The first core responsibility includes providing a sufficient amount of water to ward off dehydration.<sup>180</sup>

¶55 While the core responsibilities focus on immediate obligations, states parties are also faced with the long-term responsibilities usually associated with a human rights covenant: the obligation to respect, the obligation to protect, and the obligation to fulfill.<sup>181</sup> The obligation to respect entails refraining from any action or policy that “interferes” with the right; the obligation to protect refers to states parties preventing outside groups from interfering with the right; finally, the obligation to fulfill refers to states parties adopting all necessary measures to realize implementation of the right.<sup>182</sup> The obligation to fulfill can be further dissected into the obligations to facilitate, promote, and provide.<sup>183</sup> These obligations, respectively, require states to adopt all necessary

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<sup>173</sup> *Id.*; KHALFAN ET AL., *supra* note 4, at 49 (Also includes minority group, indigenous peoples, refugees, asylum seekers).

<sup>174</sup> U.N. Comm. on Econ., Soc. and Cultural Rights [CESCR], *supra* note 30, ¶ 10.

<sup>175</sup> *Id.*

<sup>176</sup> KHALFAN ET AL., *supra* note 4, at 45.

<sup>177</sup> *Id.* (Obligation stems from General Comment 3).

<sup>178</sup> U.N. Comm. on Econ., Soc. and Cultural Rights [CESCR], *supra* note 30, ¶ 37.

<sup>179</sup> *Id.*

<sup>180</sup> KNIGHT, *supra* note 2, at 9.

<sup>181</sup> Barlow, *supra* note 139, at 2-3.

<sup>182</sup> *Id.* at 3.

<sup>183</sup> U.N. Comm. on Econ., Soc. and Cultural Rights [CESCR], *supra* note 30, ¶¶ 25-29.

measures for realization of the right, promulgate the appropriate education concerning sanitation and hygiene, and ensure access for all groups of people.<sup>184</sup>

#### 4. Enforcement

¶56 Enforcement of the right presents a separate set of issues. If General Comment 15's interpretation were to be adopted by the UN, only states parties to the ICESCR will be held responsible for implementation.<sup>185</sup> If a state-party fails to take the appropriate steps for implementation, it will be allowed the opportunity to defend the omission, unless it involves a violation of a core obligation.<sup>186</sup> Even in circumstances of "deliberate retrogressive measures," states parties are still granted the opportunity to justify their positions by making a showing that the "maximum available resources have been used" and that the measures finally taken were only taken after a "careful consideration of all alternatives..."<sup>187</sup> Unfortunately, the methods of enforcement are not as stringent as needed to ensure universal adherence to the ICESCR.

¶57 Punishment of states parties who choose not to conform includes a committee report of the infraction along with comments on options for future improvement.<sup>188</sup> Despite the mild penalties, the enforcement actions would at least provide some incentive for governments to conform and recognize the right.

¶58 The most important element of enforcement is the ability for individual citizens to bring complaints against states parties to international bodies. Quite often, states parties are ill-equipped to adjudicate human rights abuses. An international body with experience in these matters serves as the only means of establishing any sort of remedy.<sup>189</sup> Although the UN rejected communications and complaints from individuals in the past, in December of 2008 it "adopted an Optional Protocol to the ICESCR."<sup>190</sup> The Optional Protocol allows the CESCR to hear and consider individual communications. This is not to suggest that the CESCR will rectify every, or even any, ICESCR abuse committed by states parties, but it stands as a first step. If the right to water were to be recognized, this provision would allow the committee to hear water-related complaints from the neglected individuals so often ignored in their own countries.

¶59 For the meantime these mechanisms of enforcement are sufficient. In the long run, however, they are ill-equipped to ensure the protection of every person's right to clean freshwater. If General Comment 15 were to be adopted into the ICESCR, new sets of protocols and "legally binding instruments both at the national and international levels..." would need to be established to ensure that violations by states parties are infrequent.<sup>191</sup>

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<sup>184</sup> *Id.*

<sup>185</sup> KHALFAN ET AL., *supra* note 4, at 28.

<sup>186</sup> U.N. Comm. on Econ., Soc. and Cultural Rights [CESCR], *supra* note 29, ¶¶ 39-44.

<sup>187</sup> KHALFAN ET AL., *supra* note 4, at 14.

<sup>188</sup> G.A. Res. 2200A (XXI), *supra* note 154, art. 16-25.

<sup>189</sup> See STEVEN SHRYBMAN, SACK, GOLDBLATT AND MITCHELL LLP, CRITICAL REVIEW OF THE GREEN CROSS PROPOSAL FOR A GLOBAL FRAMEWORK CONVENTION ON THE RIGHT TO WATER 9 (2005).

<sup>190</sup> Office of the U.N. High Comm'r for Human Rights, *supra* note 159.

<sup>191</sup> Ziganshina, *supra* note 147, at 116.

## IV. CONCLUSION

¶60 General Comment 15 stands as the model embodiment of what we can hope for in an established right to water, and, although it serves only as an authoritative statement, its influence is widespread. Since General Comment 15's adoption in 2002, seventeen countries have altered their constitutions or laws to conform to the ideals of valuing water as a right of every member of the global community.

¶61 The recognition of the right to water does not solve looming water scarcity, nor does it allay current suffering. However, recognition of the right would place the issue of scarcity and human need at the forefront of discussion in international fora. If recognized and implemented into the ICESCR, or established as its own freestanding covenant, an official statement of the right to water would force states parties to provide access to water resources and make the necessary policy changes to ensure that access would not be disrupted. Governments would be held accountable for their actions and would be responsible for adapting their policies to include the goals of conservation and citizen access. Water scarcity will not be solved through policy decisions or binding treaties alone, but will require the coordinated efforts of the entire global population. The recognition of the right to water by the UN would be a building block to initiate the chain of decisions necessary to prevent the dire effects of water scarcity.