



## ON THE HEADS OF WOMEN

*Kathy Robb*

Kathy Robb became interested in environmental issues as a child, while riding in the backseat of the family station wagon out west. A partner with Hunton & Williams in New York, she focuses exclusively on environmental law, including litigation in federal district and appellate courts and advice on regulations, compliance, and environmental risks. She works on water issues under the Clean Water Act, the Endangered Species Act, the Natural Environmental Policy Act, water-related Superfund sites with PCBs and other contamination in sediments and groundwater, representing clients that include water districts, developers, electric utilities, energy companies, investors, lenders, chemical manufacturers, and paper mills. She founded and directs the Water Policy Institute, which seeks innovative, sustainable solutions to water supply and quality issues. Robb is co-founder and chair of the Women's Network for a Sustainable Future, a nonprofit organization advancing sustainability, and a board member of the Environmental Law Institute in Washington, D.C.

**A** GIRL AWAKES; washes her hands and face with warm, clean water running from the tap in her bathroom; dresses; grabs breakfast; brushes her teeth with cold, clean water from the same tap; flings her books and papers into a satchel that her mother worries is too heavy for her light and growing frame; and races out the door to the bus.

Another girl awakes, splashes cold water from a basin onto her face, grabs breakfast, and takes a large, empty container from the corner as she races out the door to join some other girls and start walking the six miles to her destination.

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The first girl, my own daughter, is an American and lives in New York City. Every day she enjoys—without giving it a second thought, in the same way she breathes the air or assumes that she will have Internet access on demand—delicious water at the temperature of her choice from taps at home, at school, in museums, in public bathrooms, and in the pizza place around the corner.

The second girl lives in Africa but could be from any number of other places in the world today where there is no water service. She *is* the water service. And because she must walk more than six miles each way and stand in line for a couple of hours to bring water to her community, she does not go to school.

The first time we flush a toilet each day in the United States, we use about five gallons of water—more water than one out of every five people in the world has available to drink, cook, clean, and wash over a whole day.

There have been only a handful of instances when a new idea has marked unmistakable and instantaneous change from everything that has come before—where an innovation stands like a bright line between past and future and alters the way we think about ourselves and the world we live in. One such instance—at least for me—is that remarkable photograph of Earth taken from space back in 1972, during the last manned U.S. moon mission, Apollo 17. That iconic photograph, called the blue marble, demonstrates vividly that water (mostly salt water) covers about 70 percent of the planet. In fact, oceans make up more than 97 percent of the water on Earth, but it is expensive and highly energy intensive to take that salt water and make it usable. About 2.5 percent of the planet's water is fresh, but more than two-thirds of fresh water is locked up in the polar ice caps and glaciers. What is left, in aquifers, wells, rivers, and lakes, amounts to trillions of gallons, but still only a very small

amount compared with all the water available. In 1972, when the “blue marble” photo was taken, there were about four billion people on Earth. Today, within just one generation, there are almost seven billion. It is projected that by 2050 there will be nine billion. Based on these statistics, water consumption is doubling every 20 years.

There is another reason that photo of Earth, looking like a blue marble floating in space, beautiful and fragile, is important. For the first time, we saw our planet as an indivisible whole, with no political boundaries and nothing to suggest that it is inhabited and being constantly changed by those who live here. The innovative technology that took us into space allowed us to see Earth from a perspective never before possible. That photo dramatically altered our appreciation of the natural environment and drove home that whatever happens on the planet happens to all of us. It illustrates that water is at once local and global.

I have always loved the ocean. My father had been in the Navy as a young man, and my brothers and I enjoyed playing in the waves in visits to sandy white Jones Beach, starting when we were babies. Later, growing up in Texas, I came to appreciate the difference between the ocean and a swim in a lake, and the contrast between the sweet-tasting water from the tap in New York and the municipal sources in Dallas, on the one hand, and the occasional well water we had when visiting friends in more remote parts of Texas. But it was only relatively recently, in Silicon Valley, that I came to understand the crisis in a lack of drinking water globally, and how it is tied to women and girls.

In 2000, journalist Ann Goodman contacted me with the kernel of an exciting idea about an organization for professional women, to promote and encourage sustainability. My enthusiasm and interest were immediate. I saw sustainability as a dynamic

concept that, implemented in all its depth, could bridge differing views on environmental issues and bring together citizens' groups, regulators, and industry. Here, perhaps, was a way to move beyond the polarizing conflicts that had characterized the beginnings of environmental thinking in the United States. With a handful of similar-minded women, we founded the Women's Network for a Sustainable Future (WNSF).

At a WNSF-organized peer learning program in Silicon Valley shortly afterward, we heard from several technology companies about their efforts to bring laptops to the world's poorest children. Their goals were to teach and to connect isolated children to the larger world. Their stories were similar and fascinating. It turned out that to teach schoolchildren through computers, they first needed water.

The original intention of the companies was to distribute laptops and run educational programs through schools. They quickly found in their early planning, however, that in many locations there were no schools, or the schools were only sparsely attended, because there was no water or sanitary facilities available. Girls were especially affected by the lack of sanitation, because they required privacy, and because they stopped coming to school altogether once they started menstruating, because of the lack of separate sanitary facilities. Both boys and girls often missed school as a result of illnesses from contaminated water. And of course, many of the locations lacked the power that was required to run any laptop.

So these inventors of technology did what they do best—they innovated. They partnered with governments and nongovernmental organizations whose expertise was improving sanitation and water facilities, and with organizations whose mission was to help build schools. They provided the laptops and the educational

programs as they had intended and were rewarded with the satisfaction of seeing the benefit to the children from their work.

Around the world—in remote parts of Africa, India, Brazil, Chile, Egypt, China, Russia, and Nepal, in Haiti and Togo—it is often women and girls who are responsible for providing water to households, women and children who are primarily responsible for collecting and managing water and making it safe to drink for their families. They travel several miles each day from their home in search of water, spending as much as eight hours a day collecting water. Every drop of water carried home must be managed carefully so there is enough for drinking, cooking, cleaning, bathing the family, and watering the vegetable garden. This means that millions of women and children spend hours each day searching for water, waiting in line for water, and carrying it back home on their heads, hips, or backs, causing damage and pain to their necks and spines. A water treatment engineer working in Haiti once reported watching women climb up and down a mountain path two miles each way every day carrying five-gallon buckets on their heads. Filled with water the buckets weighed about 40 pounds. The engineer scarcely washed for four days, to limit as much as possible any contribution to the women's burden.

Fetching water far from home can also be more immediately dangerous. Traveling out of their communities across comparatively long distances on foot, women and girls face the threat of sexual attack. In some cultures, rape victims, and the children of rape, are ostracized by the community. And I should mention that spending 60 percent or more of each day providing water leaves little time for other activities, including going to school, growing and preparing food, and working to produce income. It is estimated that in India alone, women spend 150 million workdays

per year fetching water, equal to a national loss of income of 10 billion rupees (\$217,000,000).

The issues of clean water and sanitation cannot be separated. Rural water sources in developing countries are frequently contaminated, and even if there is a more healthful source, added distance, fear of travel, and time constraints may result in women's obtaining, or accepting, lower quality water—not only in rural settings, but also in cities, where clean water may be priced out of reach for the poor or otherwise unavailable; indeed, contaminated water is the only option for some. Women and children are also the ones who suffer from inadequate sanitation during childbirth as the result of a lack of clean water. In Tanzania, women report taking clean water as the most highly prized gift for new mothers. And it is women who care for family members with waterborne diseases, most often their children.

Moving water to communities by means other than on the backs of girls is an engineering problem that has been addressed successfully before. After all, the Roman Empire began construction of its amazing gravity-driven aqueduct system almost 2,300 years ago. By the time the system was completed, some 500 years later, Rome's 260 miles of water infrastructure were capable of delivering 85 million gallons of water a day to the one million citizens of the ancient city.

Most scholars agree that any solution to water availability must include community women in decision-making and water management to reach effective solutions. Studies in Asia and Africa suggest that women are not often part of water management organizations in the community, resulting in decisions that are not optimal. For example, establishing a water source on a main road close to home may address the issues of long-distance travel to obtain water and free women to pursue education and

income-producing work, but the location in a public place may have other issues that are not addressed and that are crucial for these women, such as safety and modesty.

Not surprisingly, water engineering tends to emphasize providing water facilities, leaving the social issues to be sorted out over time. Women's involvement in water management can sometimes be seen as largely a household function centered on providing, managing, and safeguarding water for the family, although studies show that women are equally interested in exploring ways to be engaged in income-producing enterprises. Of course, improvements in water supply address both. A gender focus on water management would involve a reexamination of the social approaches and how they might differ for men and women.

There is also agreement that engineering solutions must be compatible with the culture and on a scale with the problem. In considering how to provide safe, sustainable supplies of drinking water and improved sanitation and hygiene, the challenge is not finding solutions—proven, effective, sustainable solutions abound that are simple and inexpensive and can be taken individually and collectively. The issue is awareness and implementation.

By tapping into creative, innovative thinking, we are finding less costly and more efficient ways to address water issues and get those girls to school. Small projects like establishing a water purification lab for a local hospital where more than half the patients were being treated for waterborne diseases; using chemicals available locally to introduce simple methods of water purification; supporting local efforts to design a water treatment center; designing and building simple latrines; introducing pump handles that are easy to use and maintain; constructing a water tank that can be hooked up to existing, unused supply pipes, rather than building an entirely new, more expensive system; planting trees to

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combat deforestation and improve watershed quality; building a well pump that runs on the power from children playing on swings and other playground equipment; erecting stone barriers to prevent runoff and filter water—all these actions and many others have been taken by communities to dramatically improve water supply and, as a consequence, the lives of their people.

The United States has an unparalleled opportunity to establish and implement a strong global water policy that benefits the needy, encourages sustainability, advances economies, and saves millions of children's lives. In his Inaugural Address, President Obama vowed to the world "to work alongside you to . . . let clean waters flow." We need to make good on this promise. And we need to encourage developing countries to promote sustainable water through their regulatory frameworks.

The great poet Horace, who enjoyed the water brought to his city by those Roman aqueducts built 2,300 years ago, said, "To have begun is half the job: be bold and be sensible." We have begun the job of getting clean water to all people who need it, by identifying the problem and the answer. Now is the time to be bold and sensible, and finish that job, creating solutions that don't bear the weight of water on women's heads.