

Water Wars of the Near Future

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A good many prominent people have recently forecast, with a sort of gloomy relish, that wars will one day, probably soon, break out over water. These forecasts come not just from the environmental movement, which has long become accustomed to fits of Malthusian soothsaying, but from officials of so sober an institution as the World Bank. Ismail Serageldin, the bank's vice president for environmental affairs and chairman of the World Water Commission, stated bluntly a few years ago that the wars of the 21st century will be fought over water." Although he was roundly criticized for this opinion, he refused to disavow it and has frequently asserted that water is the most critical issue facing human development. The former UN secretary general Boutros Boutros Ghali said something similar about water wars. So did Jordan's late King Hussein, who had obvious cause to mean it. Egypt has more than once threatened to go to war over diversions of the Nile.

There are forecasts that water will in certain critical but arid parts of the world, cost as much per barrel as oil, and within a generation. Water is in crisis in China, in Southeast Asia, in southwest America, in North Africa—indeed, in much of Africa except the Congo, Niger, and Zambezi basins. Even in Europe there are shortages—drought is no longer a word alien to England, where water tables were dropping throughout the early 1990s. In many parts of Europe, downstream towns and cities are beginning to feel the consequences of the careless alteration in age-old hydrological ecosystems, as rivers suddenly rage out of control, wetlands dry up, and contaminants enter the groundwater. Yes, even in Europe there is a crisis in water supply and management, as groundwater tables sink and rivers are reduced to a trickle or increased to a destructive flood.

Everywhere you look, there are signs that the global water supply is in peril:

- The level of the Dead Sea plummeted more than 10 meters during the 20th century. The relentless sun is one culprit. Another is the agreement in 1981 between Israel and Jordan to increase the volume of water they could take from the River Jordan, which has been reduced to little more than a drainage ditch. In northern Israel the Sea of Galilee, which gives much of the south its water, is shrinking and threatening to turn saline. In Gaza, overpumping is reducing the hydrological pressure, which is letting the sea water in, and the wells are producing water that is less and less potable. Already Jordan, Israel, the West Bank, Gaza, Cyprus, Malta, and the Arabian Peninsula are at the point where all surface and ground freshwater resources are fully used. Morocco, Algeria, Tunisia, and Egypt will be in the same position within a decade.
- About 250 million people inhabited the earth two thousand years ago. By 2020 there will be 400 million along the North African shores and in the Middle East alone. And the water supply is shrinking as fossil aquifers are used up.
- Much of Africa sustained a crippling four-year drought in the mid-1980s. Millions died — some of them through evil politics, but many because the crops failed through lack of water.
- The Sahara is expanding. Four thousand years ago hippos played where there are now only stone and scrub.
- Lake Chad—once, it was supposed, one of the sources of the Nile — is shrinking at a rate of nearly 100 meters a year. Already, in dry years, humans can wade across it, safely, if they are wary of crocodiles and hippos.
- Water supplies in the Nile Valley itself — the cradle of civilization — are in peril. Egypt is an efficient user of water, but Egyptians are consuming virtually all the available supply, and the population is growing at more than 3 percent per year. There are a million new Egyptians every nine months.
- In millions of hectares of northern China, the water table is dropping at a rate of 1 meter a year. Irrigation — and its wasteful runoff — is blamed. Beijing can now supply itself only by diverting water

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from farmers, who give up farming and retreat to the cities — adding to the water demand there. Huge diversion schemes are afoot to bring in water from the water-rich and flood-prone south, but this may not be enough, or may not be in time to match need to supply.

- In the Punjab and in Bangladesh, where there is flooding almost every year, the rate of drop in the water table is even faster than in China. Too many people, too little retained water.
- The water level in the once-pristine Lake Baikal, the deepest fresh-water lake in the world, is sinking steadily. At the same time, the quality of its water deteriorates as effluent from unregulated factories pours into it.
- In the southwestern United States, politicians have notched the rhetoric up and are beginning to view northerner reluctance to divert water southwards as acts of ecological aggression. Not just from northern California, Oregon, and Washington, but from Alaska and Canada too. Some of the grandest rivers of northwestern Canada, in this view, are being wasted — allowed to flow uninterrupted into the oceans, instead of being channeled southwards for irrigating parched farmland. Las Vegas is demanding a greater share of the waters of the Colorado River. Many places in the High Plains are overdrafting the aquifers on which the region's farmers depend.

Entrepreneurs in Colorado and other states have run into furious and passionate opposition to their plans to “mine” water; the private control of water resources is more and more an issue. Two decades ago, the Roman Polanski movie “Chinatown” had as its underlying theme the willingness of politicians and developers to murder for the right to bring water to the American southwest — so valuable a resource did it appear. Since then, there have been several equally celebrated but real-life civil trials involving the crucial question: Who controls supply?

The tough question is, are these scary forecasts justified? Is any place that short of water — and if so, is the only alternative warfare?

The possibility that water wars will erupt derives, after all, from a few simple propositions:

- The world is not running out of water — there is plenty for everyone. But it's often in the wrong quantities in the wrong places at the wrong time.
- There is no less water than there used to be — there is the same amount of water on the planet as there was in prehistoric times. But there are more of us — many more of us and we are each using vastly more water.
- Very few major water systems are contained within one political entity.
- Many transborder water systems are in places where the political is already fractious, and where water resources are increasingly scarce.

If you live in a part of the world that is water scarce, there are really only three strategies you can follow:

- 1: If you need more water, get more water. That means you either import water from some place where there is a surplus, or you make more fresh water yourself.
- 2: If you can't get more water, well then, use less of it. Reduce demand. This can be done in three ways: by conservation; by pricing mechanisms; or by making existing water consumption more efficient through a combination of a new water ethic and skillful use of imaginative technologies.
- 3: By definition, water use will go down if there are fewer people. But is this likely to happen? Was Thomas Malthus, the doomsayer who forecast worldwide famines because populations were growing faster than the food supply, right after all?

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Actually, there is a fourth strategy: Steal water from others. That's where Water Wars comes in.

In ancient Jewish, Christian, and Islamic traditions, the ultimate source of the waters of life lie beneath that politically potent piece of real estate called Jerusalem—a metaphor for the recognition that the solution to the problems of water is ultimately political. Who owns water? Who processes it? Who controls it? Who wants to steal it? Who can?

In transnational water disputes, which is the most dangerous? When the upstream nation is more powerful than the downstream, and therefore more cavalier about taking into account downstream needs? When the downstream nation is more powerful, in which case the upstream nation risks retaliation for any careless handling of the supply? Or when both countries are water stressed and more or less equal in power? The pessimists will say all three are dangerous. Egypt, a powerful downstream riparian, has several times threatened to go to war over Nile water; only the fact that both Sudan and Ethiopia have been wracked by civil war and are too poor to develop “their” water resources has so far prevented conflict. In the Euphrates Basin, Turkey is militarily more potent than Syria, but that hasn't stopped the Syrians from threatening violence. And there are endless examples of powers that are similar in military might, but have threatened war: along the Mekong River, along the Parana, and other places. In the Senegal Valley of West Africa, water shortages contributed to recent violent skirmishes between Mauritania and Senegal, complicated by the ethnic conflict between the black Africans and the paler-skinned Moors who control Mauritania. On the other side of the country, desperate Mauritians wrecked a Malian village after cattle herders refused to let them cross the border to water their cattle at a well.

There are those who think the possibility of water wars overblown. The Canadian security analyst Thomas Homer-Dixon, a name that pops up as a footnote in numberless academic papers, is one of the skeptics. Homer-Dixon's research found virtually no examples of state violence associated with renewable resources like fish, forests, or water, but many associated with non-renewables like oil or iron. He pooh-poohs the alarmists, though he acknowledges that “water supplies are needed for all aspects of national activity, including the production and use of military power, and rich countries are as dependent on water as poor countries are . . . Moreover, about 40 percent of the world's population lives in the 250 river basins shared by more than one country . . . But the story is more complicated than it first appears. Wars over river water between upstream and downstream neighbors are likely only in a narrow set of circumstances. The downstream country must be highly dependent on the water for its national well-being; the upstream country must be able to restrict the river's flow; there must be a history of antagonism between the two countries; and, most important, the downstream country must be militarily much stronger than the upstream country.”

He found only one case that fit all his criteria: Egypt and the Nile. Not everyone agrees with this analysis, thinking it overly optimistic. Frederick Frey, a political scientist with the University of Pennsylvania, argues that water is different from renewable resources such as fish or wood. “Water has four primary characteristics of political importance: extreme importance, scarcity, maldistribution, and being shared. These make internecine conflict over water more likely than similar conflicts over other resources. Moreover, tendencies towards water conflicts are exacerbated by rampant population growth and water-wasteful economic development. A national and international ‘power shortage,’ in the sense of an inability to control these two trends, makes the problem even more alarming.”

Here are the main water hot spots to watch for:

- The Jordan Litani system and the West Bank aquifers. Israel and Jordan are already using more water than they get—so where is the necessary incremental supply to be found?
- The Nile. Egypt downstream, Sudan, Ethiopia and even Uganda upstream. And a resource already stretched very thin.
- The Tigris-Euphrates system, Turkey upstream, Iraq and Syria downstream. Wars have already been threatened in this system, and Turkey's massive Anatolia Project (xxx dams and reservoirs) is certain to make things worse.

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- The Ganges system between India and Bangladesh, and the Indus between Pakistan and India—in a region famous for its saber-rattling, where the two countries have been at war many times, most recently over Kashmir.
- The Carvery River in southeastern India, the country's fourth largest, has already set off pitched battles between troops and citizens from two Indian states, Karnataka and Tamil Nadu.
- The North African littoral. No major rivers to speak of, but Colonel Gaddafi's mining of the sub-Saharan aquifer is causing alarm among his neighbors, most notably Algeria.
- Botswana and Namibia in South Africa have several times come close to war over Namibia's threat to divert waters away from the Okavango system, home to Botswana's major source of water and one of Africa's last great refuges for wildlife.

Other areas where water is in critical supply but where the threat of war is much less, include the Parana system, the Colorado system, and much of sub-Saharan Africa.

There is another way of looking at the notion of water conflicts, which Homer-Dixon acknowledges and urges on the world's policy makers. Water shortages may not lead to shooting wars, but they most certainly lead to food shortages, increased poverty, and to the spread of disease. They make people poorer. They increase the migrations of peoples, further straining the massive megaslums of the developing world. Standards of living deteriorate, social unrest and violence increase, leading, as the doomsayer Robert Kaplan put it, to "the coming anarchy." Bangladesh may never go to war with India—even before the recent settlement, the Bangladeshis were too poor to do much more than grumble—but the stress caused by water shortages led to massive migrations of people, upsetting the ethnic balance of several Bangladeshi and Indian states, and leading to the rise of terrorist and nascent revolutionary movements. By other definitions, then—water wars.