

The U.S. Nears the Limits of Its Water Supplies

Public water systems are failing, several states are setting severe water use restrictions, and key water sources are drying up.

By Shiney Varghese / Institute for Agriculture and Trade Policy

I am amazed: since last summer, almost every day we see at least one news story on another water crisis in the U.S. The water crisis is no longer something that we know about as affecting developing countries or their poor in particular. It is right here in our own backyard. Today, in many parts of the U.S. we are nearing the limits of our water supplies. And that is getting our attention. The writing has been on the wall for some time. The private sector has been showing much interest in water as a source of profit, and water privatization has been an issue in many parts of the country.

The failure in public water systems has indeed been a contributing factor for this interest. In many cities, consumers have been organizing and opposing the privatization of water utilities, because they have been concerned about affordability or deterioration in the quality of service. Environmental organizations and consumer activists have also been concerned about the socio-economic, health and environmental implications of ever increasing bottled water use. But for most of us living in the U.S., water is something we take for granted, available when you turn your tap on -- to brush your teeth, to take a shower, to wash your car, to water your lawn, and if you have your own swimming pool then, to fill that as well.

So it was with alarm that many of us read the story of Orme, a small town tucked away in the mountains of southern Tennessee that has become a recent symbol of the drought in the southeast. Orme has had to literally ration its water use, by collecting water for a few hours every day -- an everyday experience in most developing countries, but unusual for the U.S. This is an extreme experience from the southeast region that has been under a year long dry spell. In fact, the region's dry spell resulted

in the city of Atlanta setting severe water use restrictions and three states, Georgia, Florida and Alabama, going to court over a water allocation dispute (settled in favor of Florida and Alabama early last month).

Early this year we also heard that drought in the region could force nuclear reactor shut-downs. Nuclear reactors need billions of gallons of cooling water daily to operate, and in many of the lakes and rivers water levels are getting close to the limit set by the Nuclear Regulatory Commission. It is possible in the coming months that we may see water levels decrease below the intake pipes, or that shallow water could become warmer and unusable as a coolant. While this may not cause blackouts, this can result in increased costs for energy as utilities have to buy from other sources.

Water concerns are not restricted to the southeast region -- similar issues have also been popping up in other parts of the United States. In the Midwest, concerns abound as to whether the newly emerging biofuel industry is putting undue pressure on the region's groundwater resources. The issue came into focus for the first time in the late summer of 2006 in Granite Falls, MN where an ethanol plant in its first year of operation depleted the groundwater so much that it had to begin pumping water from the Minnesota River.

In early February, it was reported that there is a 50 percent chance Lake Mead (on the Arizona/Nevada border), will be dry by 2021 if climate change continues as expected and future water use is not limited. Along with Lake Powell in Utah, Lake Mead helps provide water for more than 25 million people, and is a key source of water in the southwestern U.S. On the west coast, where water is a precious resource, water disputes abound: between farmers who want water for agriculture, environmentalists who want to conserve water for ecosystems, and cities who want to meet ever-growing urban water needs. Last summer, in a landmark decision, a federal judge ordered state and federal water project managers to reduce the amount of water pumped from the Sacramento-San Joaquin River Delta to protect the threatened delta smelt from extinction. Along with excessive rains in other regions and increased incidence of hurricanes in the Gulf Coast, these changes are a constant reminder of an increasingly evident reality: climate change.

In fact, in early February, Nature reported that, "In the western US, where water is perhaps the most precious natural resource, anthropogenic global warming is responsible for more than half of the well-documented changes to the hydrological cycle

from 1950 to 1999. Over the last half of the twentieth century, the region's mountains received less winter snow and more rain, with snow melting earlier, causing rivers to flow more strongly in the spring and more weakly in the summer."

Unlike Katrina's images that are as haunting as that of a severe sub Saharan drought, the images of the current North American drought are no more than a mild distraction for most Americans (though not for those who live in Orne). Yet there is no reason to be complacent. We are close to the limits of our water supplies. It is time for us to start thinking of this nation's susceptibility to these changes and disruptions and how to minimize our vulnerability to them. Barely three years ago in the wake of hurricane Katrina IATP's Mark Muller wrote: "The storm exposed some real vulnerability in the current agriculture system. As we recover from the tragedy of Katrina, we have an opportunity to rebuild and rethink how to strengthen agriculture, regional economies and the transportation and production infrastructure. He identified 10 areas of vulnerability exposed by Katrina, including energy, fertilizer, transportation markets for crops less dependent on inputs, CAFO regulation, on-farm water storage, valuing the commons and climate change."

I find these areas of vulnerability particularly relevant when it comes to the current water crisis. Like Katrina, this crisis gives us yet another opportunity to rethink and challenge issues that we need to raise: land use planning that allows unfettered development, energy production that is water intensive, and agricultural water use that is inefficient from a hydrological perspective. So far we have assumed that we can undertake any development we want, wherever we want, or we could grow whatever we want, however we want, and that water will always be available to support that growth. In the process we are draining our aquifers, polluting our rivers, tampering with ecosystems and destroying the diversity of life -- as if nature is ours to be manipulated to suit our wants. It is time to change some of our practices.

For more than a century, the federal government has spent billions of dollars, building our dams, reservoirs, aqueducts and pipelines. Ironically, in the same way that extracting/ transporting and processing water consumes large amounts of energy, the operation of power plants consume large amounts of water.

Thermal energy is one of the largest water users in the United States. However, irrigated agriculture accounts for 80 percent of water consumed in the U.S. This high percentage is partially because of low water use-efficiency (the portion of water actually

used by irrigated agriculture relative to the volume of water withdrawn). For the western United States, agricultural farms are the single largest water user, half of which is used by the largest 10 percent of the farms. High levels of irrigation subsidies, combined with archaic water laws make water use in the western U.S. highly wasteful and inefficient. But there is room for improvement in agricultural water use in almost all parts of the U.S. Water use should be such that for a given locale, appropriate incentives are put in place to ensure that water withdrawals do not exceed the recharge rate; that water conservation techniques (such as rain water harvesting) are central to land use planning; that improved irrigation efficiency and better nutrient management (to reduce non-point water pollution from farm run-offs) are rewarded; and that growing water-intensive crops in water scarce regions discouraged.

Legal judgments, such the recent case involving the Sacramento-San Joaquin River Delta, are an attempt to reverse earlier actions by state and federal water managers that have damaged the water system. But much more is needed. As Peter Gleick of the California based Pacific Institute points out in a recent article: "While predictions of economic disaster arising from the Delta decision may come true, they don't have to. But it will take a re-evaluation of our ideas about water-use and political courage by the governor, Legislature and water users to have open and honest discussions about how to redesign our water system so that it is smart, efficient and sustainable."

This is true for the nation as a whole: here in this land of plenty, we need to rethink our policies regarding urban development, energy production, and most importantly our agriculture and food systems, in order to avert an environmental crisis that many countries are already in the grip of.

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