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Water Pricing, Not Engineering, Will Ease Looming Water Shortages

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Authorities in São Paulo, Brazil's largest city, recently announced that if current drought conditions persisted, they would be forced to restrict water availability for the city of 20 million to only two days per week. The economic and social implications of such a decision are staggering. One senior water official admitted that residents might have to "get out of São Paulo" in order to bathe.

The same combination of increased demand and decreased supply that afflicts São Paulo's water supply is also gripping the American West, and we would be fools not to think that some Western cities might end up like the Brazilian city — and not in some distant future.

Poor planning, [climate change](#) and an over-reliance on engineering solutions to water scarcity problems threaten cities across the globe. Unless policy makers in Washington and state capitals heed the lessons of Brazil and other countries facing crippling water scarcity, parts of America will also be left high and dry in the decades to come.

Like the water of most large cities around the world, São Paulo's is supplied through a giant system of canals, reservoirs and pipes that transport water to the city from hundreds of miles away. Although the system has worked for decades, it has failed to keep pace with increasing demand as the city's population has grown.

Even more important, destruction of the Amazon rain forest has reduced rainfall in the region that supplies São Paulo's water, even as climate change has made Brazil more susceptible to a vicious cycle of flooding and drought. Above all, this crisis shows the limits that human and natural changes are placing on engineering solutions to water scarcity. Yet Brazilian water officials are promising more of the same, planning yet another set of reservoirs and canals to supply water to São Paulo from even more distant sources.

In trying to engineer their way out of water scarcity, Brazil's leaders are repeating mistakes made by their American counterparts. California and Arizona are among the Western states that rely on their own giant feats of engineering to pump water from mountain streams and rivers like the Colorado to such cities as Los Angeles and Phoenix. But strains are beginning to show. In the Colorado River basin, a 14-year drought has forced federal officials to begin rationing the river's

flow into Lake Mead, which functions as a giant reservoir for downstream Arizona and California. Earlier this year, NASA warned that “mega-droughts” were likely to become more common throughout the Southwest. In light of this new reality, American policy makers should take three important steps to change how the country deals with drought and water scarcity.

First, the United States needs to move away from engineering solutions in favor of economic approaches. In most parts of the country, water prices are simply too low, giving users little incentive to conserve and to adopt new, more water-efficient technology. One promising solution is to create water markets that allow people to buy and sell rights to use water.

Under a market approach, regulators set a cap on the total amount of water that can be used in a given area. The right to use a certain portion of this amount is granted to different water users, including farmers and utilities. Water users who use less than their allotted amount can sell the surplus to other water users at a profit, encouraging conservation and investment in more water-efficient technologies and processes. Water markets can also include features like water banks, which allow users to save water not used during times of plenty for use during times of drought.

Water markets and banks exist in some parts of the United States, but conflicting state and federal rules make them difficult to integrate and expand. Creating bigger water markets covering more water users is a critical step toward encouraging smarter use of dwindling water resources, especially in the western United States. Washington must work with the states to create clear and uniform rules to encourage the development of large-scale, interstate water markets that cover urban and rural areas, and ensure that water is allocated to the most important uses in times of shortage.

Second, the federal government should shift the emphasis of programs designed to aid drought-plagued regions of the country. Policy responses should move away from treating drought conditions as a temporary crisis necessitating immediate response. Instead, long-term adaptation should be encouraged. Australia has led the way in this approach by replacing temporary assistance programs with initiatives like replacing water-intensive crops in drought-prone regions with less thirsty varieties.

Third, America needs political leadership to tackle water scarcity. Lack of water is a long-term challenge, and addressing it requires sustained political commitment. As São Paulo’s leaders have discovered, ignoring the problem could lead to disaster. Policy makers, especially officials responsible for water resources, must foster a frank discussion about the trade-offs that must be made if water supplies dwindle, and about which water users should have priority in times of drought.

Americans, like their Brazilian counterparts, must prepare for a new era of water scarcity. But with proper planning and leadership, American cities need not see the taps run dry. It’s time for Washington, Brasília and other capitals to stop relying on engineering fixes, and start focusing on sustainable solutions to water scarcity.

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