



By Bob Ferguson

# prologue to a new wave

Enhancing water supply  
and reducing waste

**W**elcome to my first column for *Water & Wastes Digest (WWD)*. I hope to use it to explore current and thought-provoking issues around water and water treatment. I hope to engage you and elicit your thoughts, comments and debate. I would like to thank *WWD*, its Editorial Director Neda Simeonova and everyone at Scranton Gillette Communications for the opportunity to write this column. I very much look forward to our ongoing conversation.

## The Other 99%

I was helping my son with his homework the other day. We were working on his earth science assignment. “Do you know that less than 1% of the water on Earth is drinkable?” He asked, quoting his science textbook. I agree, not wanting to derail his studies, but in my head I am thinking, “Not really, not anymore.”

What a great time to be alive and working in the water business. With the rapid advancement of membrane and desalination technologies, fundamental truths that have long been in place are falling so fast that textbooks cannot keep up. Given enough money for technology and energy, all of the seas are accessible for drinking water. Surely, with the other 99% of the water on Earth now available to us, water shortages and conservation cannot really be that important, right? Wrong.

Although it is technically feasible to desalinate seawater, even with the tremendous commitment to desalination, treated water still would be limited to coastal areas. We would need a significant amount of resources, such as energy to transport it to inland areas. This illustrates how advancements in water treatment technology have shifted the issue of water availability to an issue of energy and economics.

Ultimately, the “water shortage” problem is not about whether there is enough water, but rather enough freshwater and whether it is in the right place.

In the U.S., many argue that a number of our supply issues could be solved by selling water at “full cost”—that is, at a market price that would attract supply to meet demand. If market pricing of water were to occur, there would be vast resources brought to bear in terms of both treatment and transportation technologies to meet demand. Market pricing of water does not exist today, and the supply of water does not meet the demand.

But what about enhancing supply and reducing waste through conservation? While there are many options that have been suggested, I would like to address two of them: rainwater collection and water-conserving devices.

## Rainwater Collection

I recently wrote an article for *WWD* sister publication *Water Quality Products* about the regulatory environment of rainwater harvesting, an

interesting option that makes a lot of sense in many geographical areas. Arizona, California and Colorado are a few good examples. But there are many areas where rainwater collection may not prove useful at all: New Orleans, for example.

Many people will recall from the stories of flooding in the city, especially in the days during and after Hurricane Katrina, that New Orleans has more of a problem with too much water than with too little. The ground in many areas in and around New Orleans is saturated, and water can be found by digging only 1 or 2 ft below the surface.

This means that tanks installed below ground tend to float to the surface unless their buoyancy is controlled; often this is done by keeping tanks filled. But in the case of rainwater, if full tanks are refilled at the rate of depletion to keep them full, then the impact on water supply and flood-water control probably is negligible. Perhaps, therefore, the technology is better suited to areas other than New Orleans.

## Water-Conserving Devices

The economics of other water-conserving devices likely will follow this same pattern. Measures have been proposed to mandate the use of low-flow, water-conserving devices on a national scale. I would argue that the water issues these products are meant to address are largely regional and local, and that they should be dealt with on such a level.

Arizona, for example, likely would be well served by the installation and use of conservation devices, in addition to rainwater catchment. Other less water-stressed areas may be better off addressing problems such as leaky distribution systems—which, in some cases, have been shown to lose as much as 50% of the treated water—that can waste both money and energy.

## Standards

Having worked in the standards arena, I recognize their value in helping new technologies develop. National standards should be put in place to help open markets for rainwater collection and water conservation devices. However, mandating the use of a particular technology or device on a national scale when the inputs to the problem differ greatly on a regional basis only serves to ignore the economic and energy aspects of the problem—and to waste resources in a penny wise and pound foolish focus on water alone. [WWD](#)

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