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Alamaro: Private investors needed to boost Texas water supply

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By Moshe Alamaro - Special Contributor

Most new water technologies and startups concentrate on drinking and residential demand and supply. In Texas, as in California, this is less than 15 percent of the total demand. There are some innovations on the demand side but not many on the supply side that address the bulk water for agriculture and industry.

Public funding for water projects in Texas is not sufficient, and the state needs to rely on private investors and venture capital. But why would venture capitalists want to invest in the slow moving, rule-bound, bureaucratic burdened water sector in Texas when they have the option to invest in “can-do” fast-paced startups in Silicon Valley? Right now, I don’t see any hope for private funding for large scale water projects in Texas if the public water sector continues with business as usual.

Water in Texas, especially for agriculture, is highly subsidized. Some Texan farmers pay less than \$10 per acre-foot while water from the Lower Colorado River Authority, for example, is sold for \$150, from Upper Colorado River Authority for \$300 and from Tarrant Regional Water District for \$250. Farmers who pay \$10 are not likely to switch to another crop that requires less water. No new water technology, no matter how efficient, can compete with such a price.

New technologies should also be subsidized, but is this likely? Such explicit subsidies would bring forth howls of protest, and farmers would be loath to call attention to their water subsidies. Private investors are not likely to invest in water technologies that rely on subsidies

New water technologies, however, could save money for federal or state governments if they were to provide subsidies that are less expensive than the “hidden” subsidies given for current water supply. For example, governments wrote off the costs of previously built reservoirs. The Department of Defense, in El Paso, paid for the largest inland desalination plant in the world.

One way around this might be to charge agricultural and industrial water consumers in Texas the real cost of water and then pay the farmers their subsidies directly based on their water consumption. This arrangement would keep the status quo but it would also enable new water technologies to enter the arena and compete with the actual high cost for water. Is this politically possible? I doubt it. It seems that water innovations in Texas are lacking, and will continue to be

so, where they are needed the most.

Another discovery is that a large portion, or even most, of Texas' water demand could theoretically be met by desalination. Yes, desalination. "Water for Texas 2012" issued by the Texas Water Development Board outlines a plan to develop 1.5 million acre-feet per year capacity by building new reservoirs at a total cost of \$13.58 billion. If we amortize this using the same financial terms used by Texas Water Development Board analysts, we find that the cost per 1 acre-foot is about \$600, equal more or less to the cost of water by desalination.

The same analysis for the planned new North Texas Lake Ralph Hall reservoir shows that the cost of water from this reservoir will be in the range of \$560 to \$930 per acre-foot.

And, according to the water development board website, most of the groundwater in Texas is brackish, found in major and minor aquifers across the state, and amounts to almost 3 billion acre-feet. With such an unlimited supply, if it were desalinated at a cost of \$600 per acre-foot, it could compete or replace the planned newly built reservoirs.

This op-ed is a policy exercise to make a point. In fact there are other potential large scale water technologies that are even cheaper than desalination that in turn is cheaper or equal in cost to water from new reservoirs. The point to be made is that new water technologies and rationalizing the water sector in Texas will require new water policies that are overdue.

Moshe Alamaro, an atmospheric scientist, designed, built and managed the Air Sea Interaction Lab at the Massachusetts Institute of Technology.