Researchers claim water irrigation efficiency efforts actually cause more water use

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An international team of researchers has found that efforts to make irrigation systems more efficient are actually prompting more water use. In their paper published in the journal *Science*, the group explains the

basis for their argument and offers suggestions about better ways to manage water use.

In recent years, it has become clear that the world is heading into a water crisis—there does not appear to be enough fresh water available to meet the coming demand. Also, natural aboveground and underground water reservoirs are being depleted with no clear alternatives in sight. In this new effort, the researchers note that one of the biggest uses of water is for growing crops—and many of those crops are grown in places that do not receive enough rainfall for proper growth. That has led to widespread irrigation. But irrigation in places like California's Central Valley is not sustainable at its current pace—groundwater levels there have been dropping for decades. Noting that they need to take action, governments around the world have paid for research efforts aimed at finding ways to use water more efficiently—and one approach has been methods to make irrigation systems more efficient. These include technology such as drip systems, which offer plants the least amount of water possible to keep them growing.

The researchers have been studying the efficiency of such systems, and have found that instead of using less water, they actually use more. They explain that this is because with normal watering systems, such as spraying fields, excess water makes its way back to surface or underground water systems. When using the more efficient methods, however, less water is able to re-enter natural systems, resulting in net losses. The researchers suggest that such efforts have thus far resulted in wasted money as many governments pay farmers to use the more efficient systems.

The researchers suggest that such efforts be halted, and that more useful systems be put in place. They also note that comprehensive water measurement systems need to be used to give policymakers a tool for gauging the true results of irrigation efficiency projects.

More information: Grafton et al. The paradox of irrigation efficiency, *Science* (2018). DOI: 10.1126/science.aat9314