

Study disputes need to conserve farm water

Tia Ghose, California Watch, 11-29-11

A new report suggests that California agriculture already uses water efficiently and disputes the notion that conservation could free up large amounts of water for other uses.

Increasing water efficiency would generate only 330,000 acre-feet per year of new water, according to the study, which was conducted by the Center for Irrigation Technology at CSU Fresno. That represents about 0.5 percent of the state's water use.

Switching from flood irrigation to less water-intensive methods, such as drip irrigation, usually will not make more water available in a given region because runoff may be reused by other farmers or fish and wildlife, the study says. Flows that seep into the soil but are not used by crops may replenish the groundwater supply.

"What they point out is that what isn't used by one farmer is generally used by others," said Tim Quinn, executive director of the Association of California Water Agencies, a coalition of public water agencies. Other users may benefit as well, he said. For instance, "virtually every wildlife refuge relies on return flows from agricultural for its sustenance."

In addition, improving agricultural water conservation may have unintended consequences. For instance, the study notes that many cities are dependent exclusively on groundwater, so boosting agricultural efficiency may result in less water seeping into underground aquifers, thereby depleting city supplies.

The only way to significantly reduce farm water consumption is to take some land out of production or change the types of crops, which is not a true water savings, but rather a diversion of water to other uses, the study concludes.

Not everyone agrees with the report's analysis.

While it's true that water systems are interconnected, more intensive farm water use has consequences beyond the total volume of water available, said Rebecca Nelson, lead researcher for the Comparative Groundwater Law and Policy Program at Stanford University.

"If a farmer uses water, generally, the quality of that water will decrease when it goes to the next use," she said.

More water application means more pesticides and fertilizers as well, and nitrogen-rich runoff from farms seeps into groundwater supplies and can contaminate wells with nitrates, she said. Nitrates might cause blue baby syndrome, which causes infants to carry less oxygen in their blood. That can be a particularly tough problem in poor communities where people cannot afford to dig deep wells that bypass nitrate contamination, she said.

Tracking water use is notoriously tricky, but there is room for efficiency improvements, said Heather Cooley, co-director of the water program at the Pacific Institute, which advocates for greater water use efficiency. Available data from 2001 suggests that many farmers in the state still rely on wasteful watering methods, such as flood irrigation. A 2009 report by the institute found that wider use of water-sparing techniques, such as drip or scheduled irrigation, could save up to 17 percent of the total agricultural water applied to fields.

In addition, the new report does not account for the fact that more efficient farming practices have other

benefits, Cooley said. More efficient water use may improve crop yields and reduce the need to invest in water infrastructure, she said.

A big part of solving the water shortage in the state is to improve storage and capture systems, said Quinn, of the water agencies association. In wet years, places like the San Joaquin Valley are unable to adequately store surplus water for drier years, when the valley depletes groundwater supplies.

Swapping water-intensive crops such as rice for less-thirsty crops such as grapes can decrease farms' water consumption, though the consumer demand and costs of switching to different crops can be a deterrent, the study notes.

Stanford's Nelson contends that farmers plant water-guzzling crops because water is not priced appropriately. While some farmers pay for water use, many pump from wells on their property and pay only for the electricity to draw water from the ground. That makes crops like rice seem artificially cheap to produce, Nelson said.

"There's no water pricing scheme that says, 'What are the environmental impacts of using this water, what are the social impacts of using water?,' and in my view, that would be a sensible way of making sure the use of water is optimal," she said.