

## Water-saving techniques should be taught to farmers, study urges

By J.N. Sbranti

[jnsbranti@modbee.com](mailto:jnsbranti@modbee.com) June 10, 2014

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Farmers need to be more water efficient, and government funds should be used to help train them how, according to a new study.

If California approves a water bond, the study's authors want part of it to pay for "farmer outreach, education and assistance programs for on-farm water-use best management practices."

"Beyond the Irrigation District: Investing in On-Farm Water Stewardship for California's Future" was released this week by the Community Alliance with Family Farmers and the California Climate and Agriculture Network.

"Agriculture can do more to optimize its use of water, and the government can help them," said David Runsten, policy director for Community Alliance with Family Farmers. "We have to get everybody to be as careful as they can be with water."

Runsten grew up in Modesto, and he said his family used to grow almonds and peaches near Escalon.

"Farmers are growing food for people, and that's important," he said. "But we need to make sure they're doing it in the most responsible way."

Runsten, who graduated from Downey High in 1972, said his group's study found that previous government-funded water conservation programs did not focus enough on teaching farmers how to use the best water-management practices on their farms.

If more farmers would adopt water-saving technologies and practices, Runsten said, it "might free up more water than building more dams, and it would be cheaper."

But that's not how taxpayer money has been spent in the past.

The study found that previous California water bonds – such as Proposition 50 in 2002 and Proposition 84 in 2006 – "largely neglected on-farm water stewardship projects." It estimated that 71 percent of the funds that were supposed to go toward efficient agricultural water use got spent on infrastructure and engineering projects, such as pipelines, canals and pumps.

"Only 8 percent went to outreach, education and technical assistance projects," the report calculated.

It found the federally funded Environmental Quality Incentives Program also has allocated the majority of its water conservation funding to pay for technology and equipment.

Of the \$9.2 million spent in Stanislaus County on that federal program's water conservation efforts from 2002 through 2010, the study found that about \$8.4 million was spent on irrigation pipes and irrigation systems, especially micro-irrigation systems.

Rather than continuing to pay for new equipment, Runsten said, "more attention needs to be given to how we manage these irrigation systems."

Farm adviser Roger Duncan agrees with that.

"Just because you have a more efficient system doesn't mean you are using it optimally," said Duncan, the University of California farm adviser in Stanislaus County, who specializes in almonds, grapes, peaches and other tree fruit.

"There is a real need to help farmers understand how to use their low-volume irrigation systems," Duncan said. He said helping farmers fine-tune their watering systems "could make a difference" with efficiency.

But low-volume systems – such as micro-sprinklers that deliver water precisely where a tree can absorb it – don't necessarily use less water per year than old-fashioned flood irrigation, Duncan explained. Instead, he said, they provide water in a way that's easier for the plant to use.

Duncan said he's "skeptical" of the study's contention that farmers could save a lot of water by changing their farm management procedures.

Runsten, however, said there are proven water-saving practices farmers could be taught, such as how to build organic matter in their soil so it retains significantly more moisture. He said using soil moisture and evapotranspiration monitoring also save water by helping farmers decide when to irrigate.

Duncan said he is not convinced. "It's very difficult to change organic matter in our soil," he countered. Plant moisture monitoring systems do help determine when crops need water, but he described existing monitors as "time consuming and labor intensive" to use.

Runsten said many farmers who have real financial incentives to save water are doing it successfully, so he believes other California farmers can, too.

In irrigation districts where water supplies have remained relatively plentiful and inexpensive, Runsten said, many farmers have not adopted water-efficient practices. "A lot of irrigation districts have been doing things the same way for a long time," he said, without naming names. "But everybody needs to change the way they use water."

Runsten's study cites a Department of Water Resources estimate that California farmers could reduce water use by up to 1 million acre-feet per year by implementing water-use efficiency measures.

Other groups contend farmers could save far more water than that.

An analysis released this week by the Pacific Institute and the Natural Resources Defense Council calculated that if farmers adopt "key modern irrigation technologies and practices, such as drip irrigation and precise irrigation scheduling," California's agricultural water use could be reduced 17 percent to 22 percent. That would save 5.6 million to 6.6 million acre-feet of water annually.

"As a society in California, we need to help farmers better manage water," Runsten said. "If everybody in this state makes a real effort to conserve, there's going to be enough water."

Bee staff writer J.N. Sbranti can be reached at [jnsbranti@modbee.com](mailto:jnsbranti@modbee.com) or (209) 578-2196.