

CLIMATE SMART AGRICULTURE

STATE WATER EFFICIENCY AND ENHANCEMENT PROGRAM (SWEEP)

California's chronic water shortages and cyclical droughts are predicted to worsen in the face of climate change. The farmers who produce our food are especially vulnerable to the state's increasing water insecurity. To respond to these threats, in 2014, the Brown Administration established California's State Water Efficiency and Enhancement Program (SWEEP) to support improved on-farm water use efficiency that saves water, energy and reduces greenhouse gas (GHG) emissions.

SWEEP provides grants to growers for irrigation management improvements, including increased efficiency measures, soil moisture monitoring equipment, solar pumps and more. The program is very popular with farmers—during the first six grant rounds, almost three times more applications were received than were funded.



IMPACT OF SWEEP

- Number of counties receiving grants: **33**
- Total projects funded: **606**
- Water savings: More than **28 billion** gallons annually, or more than 42,000 Olympic-size swimming pools
- GHG reductions: **303,310** metric tons CO₂e over 10 years, equivalent to removing **65,000** cars from the road for one year*



FINANCES

- Average cost for GHG emissions reductions: **\$56** per metric ton of CO₂e**
- Total budget to date: **\$67.5 million**
- Budget for FY 2017-18: **Zero**
- Proposed budget for FY 2018-19: The Governor's proposal includes zero in GGFR and \$18 million in Prop. 68 funds; CalCAN is seeking **\$40 million** for the program



ADDITIONAL BENEFITS TO CALIFORNIANS

- Reduces agricultural use of scarce water supplies
- Improves air quality from more efficient irrigation pumps and solar pumps
- Cuts water and energy bills for farmers

TOP TEN COUNTIES AWARDED

COUNTY	TOTAL AWARDS
Fresno	87
Tulare	70
Butte	54
San Luis Obispo	51
Kern	42
Monterey	38
Colusa	33
Kings	32
Merced	29
Glenn	23

SWEEP is administered by the California Department of Food and Agriculture (CDFA).

More information is available on their website: www.cdfa.ca.gov/oefi/sweep/

* Calculated with CDFA data and US EPA's Greenhouse Gas Equivalencies Calculator
 ** Air Resources Board, California Climate Investments 2017 Annual Report

SWEEP PROFILES

Counties with SWEEP Grants



PAO YANG
Fresno, Fresno County

Award Amount: \$100,000

Farmer Pao Yang started farming four years ago on 40 acres of family land recently converted from almonds and grapes to a diversified Asian vegetable and herb operation. Pao received technical assistance from UC Cooperative Extension that enabled him to successfully apply for his SWEEP grant. With the funds, Pao replaced valves and installed drip irrigation throughout the farm, resulting in significant water use and cost savings. His energy use is also reduced (and therefore GHG emissions)—he estimates his farm’s annual \$8,000 energy bill is halved as a result of these improvements. Because he is able to deliver water more precisely to his crops, Pao is seeing less weed pressure which reduces labor costs, increases yields, and bolsters his farm’s economic viability.

“We couldn’t have done the application without help from University of California Cooperative Extension.”
- Pao Yang



COLLINS FARM
Davis, Solano County

Award Amount: \$79,108

After three decades operating the country’s only endive farm, Rich Collins and his wife Shelly fulfilled a lifelong dream in 2007 by buying a 195-acre farm near Davis. Today, Collins Farm is home to several small farm businesses that produce a cornucopia of organic produce including berries, apricots, figs, vegetables, hops for a local brewery, sheep for meat and chickens for eggs. They received a SWEEP grant to put solar panels on their barn, replace a gasoline-powered well pump with a solar-powered pump, and install a greywater system to use recycled water from their produce washing station to irrigate fields. They also installed soil moisture sensors which give them information on when and how much to irrigate.

“Conserving water is not rocket science, but there is a learning curve. SWEEP supports producers in taking risks to learn new methods.”

- Rich Collins

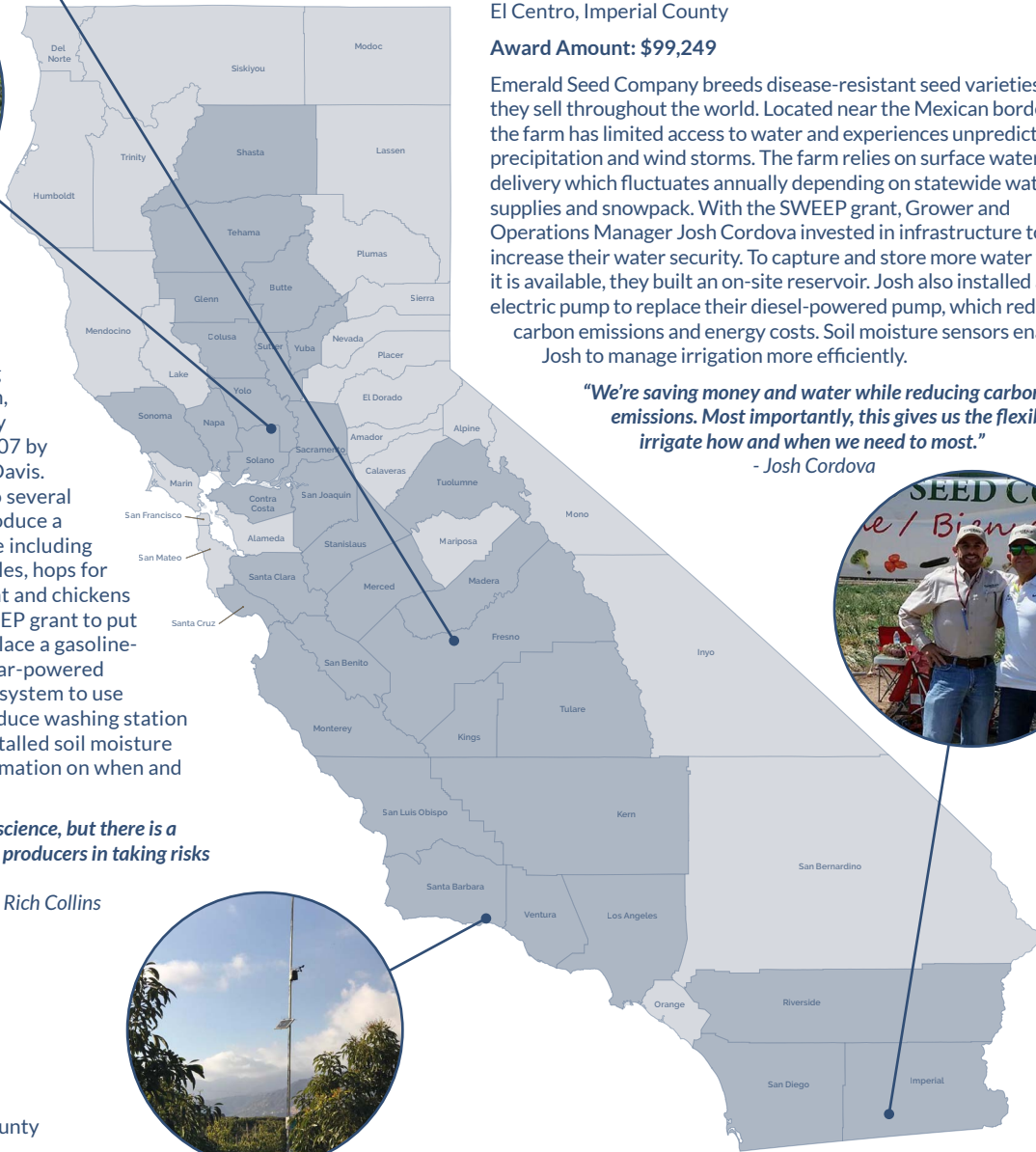
EMERALD SEED COMPANY
El Centro, Imperial County

Award Amount: \$99,249

Emerald Seed Company breeds disease-resistant seed varieties, which they sell throughout the world. Located near the Mexican border, the farm has limited access to water and experiences unpredictable precipitation and wind storms. The farm relies on surface water delivery which fluctuates annually depending on statewide water supplies and snowpack. With the SWEEP grant, Grower and Operations Manager Josh Cordova invested in infrastructure to increase their water security. To capture and store more water when it is available, they built an on-site reservoir. Josh also installed an electric pump to replace their diesel-powered pump, which reduces carbon emissions and energy costs. Soil moisture sensors enable Josh to manage irrigation more efficiently.

“We’re saving money and water while reducing carbon emissions. Most importantly, this gives us the flexibility to irrigate how and when we need to most.”

- Josh Cordova



SHARYNE MERRITT FARM
Carpinteria, Santa Barbara County

Award Amount: \$54,808

Water availability is one of several climate-related challenges facing California’s avocado industry, along with higher temperatures, new invasive pests and wildfires and mudslides. Making the most of scarce water resources motivated Sharyne Merritt to apply for a SWEEP grant for her avocado orchard near Carpinteria. She purchased solar-powered weather stations to monitor soil moisture, temperature, humidity, evapotranspiration, and wind speed. She can hone irrigation timing and amounts by tracking data online, eliminating over-watering and using less energy to pump water. She also applied mulch in the orchards to cut down on moisture loss due to evaporation.

“This new system cuts costs for electricity and labor because now I can fine-tune our system from my computer. And on cold nights, not only does it prevent frost damage to the trees by alerting me to turn on the irrigation, but I don’t have to wake up every two hours to check thermometers.”

- Sharyne Merritt

