



POLICY BRIEF

Climate Smart: Saving Water and Energy on California Farms

Recommendations for California's State Water Efficiency and Enhancement Program (SWEEP)

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Introduction

In 2014, California was in the midst of one of the worst droughts in the state's history. In response, Governor Brown and his administration created the State Water Efficiency and Enhancement Program (SWEEP) to provide financial incentives to farmers to improve irrigation management in ways that save water and energy while reducing greenhouse gas (GHG) emissions. The program is the first of its kind in the country, and its launch marked the first time the state of California directly sought to improve on-farm water use efficiency through an incentives-based program.

Funded with the state's cap-and-trade revenues, SWEEP proved enormously

popular among farmers. Since 2014, the program funded over 600 projects across 33 counties for a total of \$62.8 million.¹

This policy brief is intended to summarize the impact of SWEEP projects to date and to share program feedback from farmers and technical assistance providers to inform the program's implementation moving forward.

Methodology

Our findings and recommendations are based on a combination of program data and interviews. First, we did an analysis of the SWEEP data from 2014-2017² provided by the California Department of Food and Agriculture (CDFA), the administrator of the program. Not all grant funding rounds had the same types

¹ \$67.5 million has been allocated to the program, \$62.8 million of which went directly to projects. The remainder (\$4.7 million) has been used by CDFA for administrative purposes.

² This does not include the recently announced 27 projects funded with reallocated Department of Water Resources funding.

of data available, which we note whenever applicable below. Second, CalCAN interviewed 11 technical assistance (TA) providers who have collectively assisted more than 150 farmers in applying to the program. Interview questions for the TA providers can be found in the appendix. Third, we interviewed three of CDFA's application reviewers, all irrigation experts, who have collectively reviewed and scored hundreds of SWEEP applications. We also spoke to several farmer recipients of SWEEP grant awards.

Background

It takes energy to move water and we move a lot of it in the state. Each year, California agricultural irrigation consumes enough energy to power 1.5 million homes.^{3,4} Many operations still run diesel-powered irrigation pumps—sometimes 24 hours a day in the peak growing season—resulting in GHG emissions and air pollution in regions with some of the worst air quality in the country. Thus, optimizing irrigation efficiency and replacing outdated diesel pumps offers multiple benefits, including:

1. Reduced energy and water consumption and related costs for growers

2. Improved air quality by reducing diesel exhaust
3. Improved farm resiliency to droughts
4. Reduced GHG emissions, helping the state achieve its climate goals

Since launching in 2014 as an emergency drought response, SWEEP has helped over 600 farmers achieve these benefits. Although it is possible to save water without reducing energy use (e.g., on gravity-fed irrigation systems), as a California Climate Investment program, SWEEP requires projects to achieve both water-savings and energy-related GHG reductions.

While the record-breaking drought that catalyzed SWEEP has subsided, the risks of drought and longer-term water constraints are only increasing. Climate scientists predict California will experience increased “precipitation whiplash”⁵ as well as increased frequency of drought and flood, including a projected 50 percent increase in severe droughts by 2100.⁶

Despite the success and popularity of the program among farmers, SWEEP has been hampered by inconsistent funding. After hitting a peak budget of \$40 million in fiscal year (FY) 2015-16, the program was reduced to a budget of \$7.5 million in

³ Marks, G., et al. 2013. Opportunities for Demand Response in California Agricultural Irrigation: A Scoping Study. Ernest Orlando Lawrence Berkeley National Laboratory.

⁴ Water in the West. 2013. Water and Energy Nexus: A Literature Review. Stanford Woods Institute for the Environment and Bill Lane Center for the American West.

⁵ Defined as “two consecutive years when wet season precipitation falls under the 20th percentile the first year and above the 80th percentile the second year.” Source: Swain, D., Langenbrunner, B., Neelin, J., and Hall, A. 2018. Increasing precipitation volatility in twenty-first century California. *Nature Climate Change*, 427-433. <https://doi.org/10.1038/s41558-018-0140-y>.

⁶ Pathak, T., et. al. 2018. Climate change trends and impacts on California agriculture: A detailed review. *Agronomy*, 8(3)25.

FY 2016-17. As the effects of the drought became less visible and other climate change investment priorities dominated the politics, SWEEP’s funding was eliminated in FY 2017-18. In the current budget (FY 2018-19), SWEEP will receive \$20 million in bond funding, but zero in Greenhouse Gas Reduction Fund dollars, the cap-and-trade funding source for climate change investment programs. The one-time bond funding will allow the program to continue, but stable funding is needed. Without it, the state is missing out on important opportunities to spur greater farmer adoption of water and energy efficient irrigation management that results in multiple benefits.

Program Demand and Impact

In this section we review the program’s demand and impact, based on data provided by CDFA.

High Farmer Demand

SWEEP is very popular with the state’s farmers, with applications outnumbering awards by a nearly 3-to-1 ratio. From 2014 to 2017, CDFA received 1,602

applications and 614 (38%) applications were awarded. Of the \$152.1 million requested in applications, \$62.8 million (41%) were funded.

Central Valley, Central Coast, and Overdrafted Basins Have Greatest Number of Projects

CDFA made SWEEP awards to projects in 33 counties, with the greatest number of projects in the Central Valley and Central Coast. In contrast, very few awards were made in agriculturally-rich southern California counties like Imperial, Riverside and San Diego Counties.

SWEEP investments are happening in strategic locations and at a critical time in the state. Three out of five SWEEP award recipients are located in critically overdrafted groundwater basins, where new groundwater sustainability agencies are tasked with achieving groundwater sustainability by 2040. Moreover, about 1-in-3 SWEEP projects are located in and benefitting disadvantaged communities, which are areas of the state that most suffer from a combination of economic,

Number of SWEEP Awards Received Per County, 2014-2017		
1. Fresno - 87	12. Santa Barbara - 16	23. Santa Clara - 4
2. Tulare - 70	13. Yolo - 15	24. Riverside - 3
3. Butte - 54	14. San Joaquin - 11	25. San Benito - 3
4. San Luis Obispo - 51	15. Stanislaus - 10	26. Ventura - 3
5. Kern - 42	16. Madera - 10	27. Los Angeles - 2
6. Monterey - 38	17. Tehama - 8	28. Napa - 2
7. Colusa - 33	18. Santa Cruz - 7	29. Contra Costa - 1
8. Kings - 32	19. San Diego - 5	30. Sonoma - 1
9. Merced - 29	20. Sacramento - 5	31. Imperial - 2
10. Glenn - 23	21. Yuba - 5	32. Tuolumne - 1
11. Sutter - 21	22. Solano - 4	33. Shasta - 1

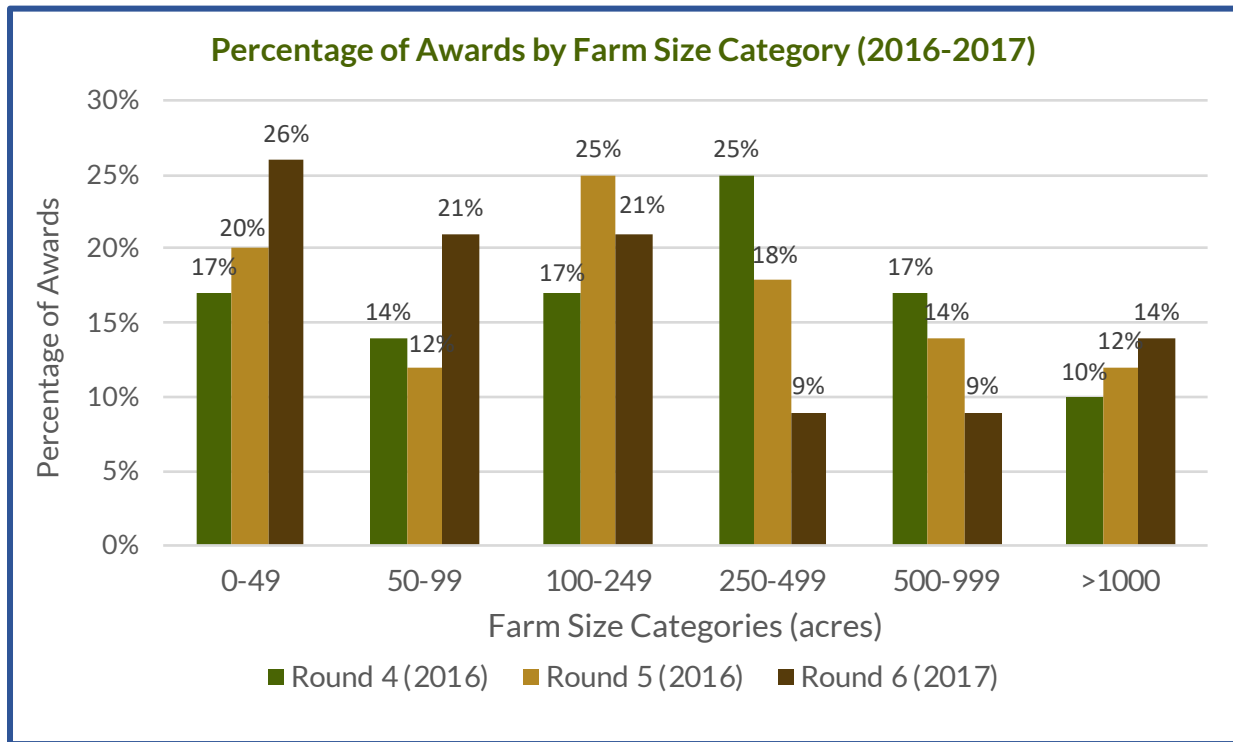
health, and environmental burdens.⁷

Awards Fairly Evenly Distributed Across Farm Scales

The chart below compares the percentage of SWEEP awards made by farm size category. As shown on the chart, awards were fairly evenly distributed across farm scales.

Small and mid-scale farms (<500 acres) received approximately 75% of SWEEP

awards in 2016-2017.⁸ One interesting trend to note is the increasing percentage of awards to small farms (<250 acres) between 2016 and 2017. CDFA lowered the maximum grant award per project from \$200,000 in 2016 to \$100,000 in 2017, which likely contributed to a greater number of smaller operations participating in the program and fewer large operations applying.



⁷ Source: 2018 Air Resources Board California Climate Investment Report

⁸ According to the 2012 Ag Census, 65% of California farms have less than 50 acres, 75% have less than 100 acres, and 90% have less than 500 acres; in other words, the vast majority of California farms are small or mid-scale operations.

Program Impact

CDFA estimates⁹ the following water savings and GHG reductions from SWEEP projects awarded in 2015-2017.^{10,11}

Projected Annual Water Savings	Projected Annual GHG Reductions
71,745 acre-feet (equivalent to 35,000 Olympic pools OR one-fifth the maximum volume of Hetch Hetchy Reservoir) ^{12,13}	22,506 MTCO_{2e} (equivalent to the annual emissions of 4,754 passenger vehicles) ¹⁴

Beyond improvements to irrigation systems, SWEEP is also encouraging farmers to consider other climate smart and water-saving strategies. Starting in 2016, CDFA began giving SWEEP applicants additional considerations in their application review for completing irrigation management training and adopting healthy soils practices, like compost and mulch application, which

can sequester carbon, reduce evaporation, and increase the water-holding capacity of soils, thereby reducing irrigation needs and increasing drought tolerance.^{15,16,17}

Additional Considerations for 2016 (Rounds 4-5)	Percentage of Recipients Who Met Criteria
First-Time SWEEP Recipient	80%
Located in Critically-Overdrafted Groundwater Basin	60%
Completed or Committed to Complete Irrigation Training	86%
Contributed Matching Funds	81%
Committed to Adopt Any of the Following Soil Management Practices:	53%
<i>Cover Cropping</i>	35%
<i>Compost Application</i>	33%
<i>Mulching</i>	27%
<i>Resource Conserving Crop Rotation</i>	9%

⁹ To understand a project's potential GHG reduction and water/energy savings, SWEEP applicants are required to fill out project quantification tools, which reviewers and CDFA then review for accuracy.

¹⁰ Due to changes in the water-savings and GHG reduction quantification methodologies and verification, CDFA did not report impacts for projects awarded in 2014.

¹¹ Source: Presentation at the July 20, 2017 meeting of the Environmental Farming Act Science Advisory Panel. Available at: <https://www.cdfa.ca.gov/oefi/efasap/docs/Binder-EFASAP-Meeting-07202017.pdf>.

¹² An Olympic swimming pool has 2.027 acre-feet of water.

¹³ The maximum capacity of Hetch Hetchy Reservoir is 360,000 acre-feet.

¹⁴ Calculated with EPA's GHG Equivalencies Calculator: epa.gov/energy/greenhouse-gas-equivalencies-calculator

¹⁵ Hudson, B. Soil organic matter and available water capacity. 1994. Journal of Soil and Water Conservation. 49(2), 189-194.

¹⁶ United States Department of Agriculture Natural Resources Conservation Service. 2008. Soil Quality Indicators – Available Water Capacity. Available at: www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_053288.pdf.

¹⁷ Flint, L., et. al. (U.S. Geological Survey). 2018. Increasing soil organic carbon to mitigate greenhouse gases and increase climate resiliency for California. A report for California's Fourth Climate Change Assessment, California Natural Resources Agency. Publication number: CCCA4-CNRA-2018-006.

Findings from Interviews with TA Providers and Technical Reviewers

CalCAN wanted to better understand how SWEEP's implementation is working for farmers and the technical assistance providers who work with them. To do that, we interviewed 11 TA providers, who have collectively assisted more than 150 farmers in applying to the program. We also interviewed three of CDFA's application reviewers, all irrigation experts, who have collectively reviewed and scored hundreds of SWEEP applications. Below are our findings.

1. One-on-one application assistance is effective, but underfunded

Over the years, CDFA has provided small grants (\$2,500 - \$5,000) to technical assistance providers (e.g. Resource Conservation Districts, Cooperative Extension and nonprofits) to help with program outreach and provide grant application assistance. Our interviews found that there is a need to improve how technical assistance is delivered.

All providers agreed that the initial focus of CDFA's outreach, which required offering two to three-hour application workshops, was an insufficient way to prepare a grower to apply to the program. Such workshops can serve as an important tool to recruit and educate farmers about the program, but nearly all of the TA providers said many of the farmers they assisted simply could not have applied without follow-up one-on-

one technical assistance. TA providers reported spending up to ten hours per applicant, not including time spent on initial outreach and education to potential applicants. To date, such one-on-one technical assistance is largely unfunded, severely limiting the number of TA providers that can offer it or the number of farmers TA providers can work with.¹⁸

The need for increased technical assistance, especially one-on-one support, was echoed by many of the farmers we spoke to about the program. One young, tech-savvy winegrape grower commented that:

"Not every farm has a next generation coming up that can devote the time to do complex applications like SWEEP. It took me about 40 hours to do the application. My uncles would've quit two hours into it... Without technical assistance that reaches out to farmers to let them know about these programs, guides them through the process and helps on the implementation end of things, we'll be investing in programs that won't work for the majority of California farmers."

2. Application period is too short; application is overly complex and time-consuming

The SWEEP application period for most funding rounds was not more than six weeks. Most of the TA providers we spoke with agreed that the application period was too short, especially for those producers who were learning about the program for the first time at their

¹⁸ CDFA has recently proposed changing its funding for technical assistance to increase grant awards, but funding levels will be tied to the number of farmers served. Our brief does not review this most recent change, but still provides important feedback on how to improve the delivery of technical assistance overall.

workshops. Providers cited the need for project planning and gathering of information—such as pump efficiency tests, irrigation system plans, and utility bills—as major barriers to finishing an application in six weeks. Another limiting factor was that outreach workshops had to be conducted within the same six-week period, so depending on how quickly a TA provider was able to pull together and advertise a workshop, growers and their TA providers often effectively only had three to four weeks to complete the application. Consequently, a few providers said the application workshops they hosted primarily served to educate growers about how to prepare for a *future* round of the program rather than the current one.

Moreover, most providers reported having to personally complete portions of the application that growers found confusing—most commonly the water and GHG savings calculators.

We also heard from a number of farmers that the application is too complex and time-consuming.

3. Problems found with water savings and GHG calculators

Every applicant is required to submit estimates of the water and GHG emission reductions that will be achieved by implementing their SWEEP project. This is accomplished using two excel spreadsheets: one for water savings and one for GHG emissions. Some TA providers and technical reviewers identified problems with the calculators.

TA providers and technical reviewers observed that the water savings and GHG calculators do not accurately capture the full range of irrigation and energy efficiency improvements possible on a farm or ranch. For example, one technical reviewer commented that not all flood irrigation efficiency improvements are included in the calculator.

Some TA providers also mentioned discovering inaccurate calculations or oversights in the calculators. For example, one TA provider found that there is no way to calculate energy savings from installing a larger horsepower pump that would irrigate larger sets, thus reducing run time. The TA provider gave an example of replacing a 10-horsepower pump with a 15-horsepower pump in order to provide the pressure needed to run a drip system; while such a system uses more energy when it is turned on, it only gets turned on about half as much time as the previous system. This TA provider said this was a common scenario for a lot of the farmers they worked with, but not one that currently fits well with the SWEEP calculators.

4. Farmers getting “upsold” by irrigation companies; high cost projects incentivized

We heard concerns from several of the TA providers that some farmers are being “upsold” by irrigation equipment companies on unnecessary or over-priced irrigation equipment, sometimes in exchange for the company completing SWEEP applications on behalf of the farmers. This may result in unnecessary

expenditures and wasteful use of state funds.

For example, a few TA providers and reviewers expressed concern that so many growers were being sold on expensive remote weather stations when existing weather systems are sufficient in most cases (e.g., CIMIS, a network of 145 weather stations managed by the Department of Water Resources). A few TA providers and reviewers also expressed concern that some of the soil moisture monitoring systems included in some of the applications were overly expensive, and noted that there are much cheaper and equally effective systems available. Additionally, multiple TA providers and technical reviewers believe that some of the new telemetry systems being funded may not be used long-term for any of the following reasons:

- The companies selling the systems, many of which are start-ups, may not last long enough to troubleshoot and maintain the systems
- The data and/or user interfaces are too complex for the average farmer to understand without technical assistance in the implementation phase of the project
- Farmers may not choose to pay renewal fees every year to maintain the service

Currently, the maximum grant award per SWEEP project is \$100,000, but an operation may apply six times to reach the cumulative operation cap of \$600,000. This high operation cap may also incentivize high cost projects.

5. Program favors pressurized micro-irrigation systems; program impacts on groundwater management need to be examined

Several TA providers and reviewers described SWEEP as primarily incentivizing pressurized irrigation systems that support drip or micro irrigation. Some providers noted that such irrigation systems may rely on unsustainable groundwater pumping and do not flush out accumulated soil salinity or recharge groundwater. To address this, some providers recommended that CDFA incentivize dual-irrigation approaches that maintain a producers' ability to recharge groundwater during high-flow times.

6. Limited scope of GHG reduction methodology limits participation in southern California

We asked the four southern California technical assistance providers we interviewed, as well as the three technical reviewers, to help us understand why so few southern California farms have participated in SWEEP.

Several of the providers and reviewers noted the program's requirement for measurable GHG reductions has excluded operations that use gravity-fed surface water or get pressurized water from their water districts because they have no *on-farm* irrigation-related energy use to reduce. Such gravity-fed or remotely-pressurized systems are common in southern California.

One TA provider in southern California said that 80 percent of the growers in their county get pressurized water from

the water district and do not have on-farm irrigation pumps. The GHG emissions reduction calculator does not consider the “embedded” energy used to pump water to farms. The TA provider suggested that capturing that energy footprint could allow more southern California farms to participate. The same TA provider has tried to work with their local utility company and water district to develop a method to calculate the embedded energy in their water deliveries to any individual farm, which may be worth exploring for the program to reach more farmers in the state.

A separate but similar issue has to do with portable irrigation pumps. An Imperial Valley TA provider noted that many growers in that region use portable diesel-powered pumps to irrigate multiple fields, which obviously have on-farm GHG emissions but don’t have energy records associated with them. The TA provider worked with one applicant to estimate their baseline fuel use, but said that estimate was not accepted by CDFA for its quantification methodology.

7. SWEEP does not sufficiently prioritize and assist socially disadvantaged farmers

A few TA providers noted that the program does not effectively prioritize socially disadvantaged farmers.¹⁹

Several TA providers who worked with socially disadvantaged farmers noted

that providing technical assistance to such farmers requires a much larger investment of time in one-on-one assistance, both in the project design/application phase and project implementation. They found that farmers with limited English and lower access to capital face greater challenges with Internet and computer access, communication with irrigation and pump companies, completion of water and energy savings calculations, preparation of a budget, and gathering of background information required for the application (e.g., latitude/longitude and soil type). These same farmers also experienced difficulties in completing the invoicing and reimbursement process during project implementation. Many providers commented that the absence of translated program materials made it harder to do SWEEP outreach and education to limited-English speaking farmers.

8. Reviewers lack adequate time and preparation for their reviews; insufficient opportunity to share program feedback

SWEEP’s technical reviewers expressed concerns unique to their role and perspective on the program. Among the issues was a lack of time for adequate application review. One reviewer reported that the amount of time they were given was inadequate for the number of applications they were given to review. The reviewer described having such a high volume of applications in a

¹⁹ Socially disadvantaged farmers are defined in California’s Food and Agriculture Code (Part 1, Div.1, Ch. 3, Sec. 512(b)) as “a farmer or rancher who is a member of a socially disadvantaged group... whose members have been subjected to racial, ethnic, or gender prejudice because of their identity as members of a group without regard to their individual qualities.”

short time period that they had a very negative, stressful experience.

Two reviewers also expressed concerns about inconsistent interpretation of the program guidelines and scoring criteria among the reviewers because there was never an opportunity for all of the reviewers to discuss the program guidelines with CDFA staff. They noted the reviewers have varying irrigation expertise and grant reviewing experience, and believed that coordination among reviewers could help them ensure that reviewers were interpreting the program guidelines in similar ways. Finally, all of the reviewers expressed an interest in having more consistent opportunities to provide feedback to CDFA on how to improve the program, given their expertise and familiarity with dozens or even hundreds of applications.

9. Program missing out on opportunities to leverage NRCS and water district investments in irrigation efficiency

A number of TA providers suggested that CDFA could work more synergistically with both NRCS, through their Environmental Quality Incentives Program (EQIP), and water districts, to fund more comprehensive, integrated water use efficiency improvements.

A few TA providers were very disappointed that the proposed joint Department of Water Resources (DWR) and CDFA water use efficiency project was not funded as planned in 2017. The project would have funded coordinated efforts by irrigation districts and their farmers to combine conveyance enhancements with on-farm SWEEP

projects. The TA providers suggested that such integrated projects would be a more impactful model for SWEEP, and expressed a desire to see the state pursue these types of joint irrigation district and on-farm water use efficiency projects in the future.

10. Irrigation management training needs improvement

A few TA providers expressed concerns that irrigation training is largely focused on system *design* rather than efficient system *management* and the training is often not reaching the actual farmworker who is responsible for day-to-day management of irrigation systems. These TA providers recommended CDFA work with UCANR to develop and fund irrigation management training for all SWEEP recipients, specifically targeting the irrigators rather than the landowners or farm managers.

Recommendations

All of the TA providers and technical reviewers we interviewed found that SWEEP is a valuable program worth further investment. As on-the-ground pragmatists and problem-solvers who work with growers on a regular basis, many of the TA providers identified solutions to address the concerns they raised about the program. We have synthesized their recommendations below.

1. Increase funding for technical assistance; focus on one-on-one assistance

- Increase funding for one-on-one technical assistance and ensure technical assistance availability in all major agricultural regions of the state.
- Include technical assistance from outreach to project development, application assistance and project implementation (including assistance with invoicing, reimbursement, and project reporting).

2. Lengthen the application period, streamline the application

- Lengthen the application period to at least 12 weeks.
- Ensure that TA providers can start outreach before the application period starts and host workshops as soon as the application period opens.
- Streamline the application and make it more farmer-friendly, e.g., use drop-down or checkbox selection menus, and auto-populate fields that have already been filled out earlier in the application.

3. Review and improve the GHG and water savings calculators

- Convene a committee of irrigation experts, technical reviewers, and TA providers to review and improve the program's water savings and GHG emissions calculators.

4. Protect program integrity by reducing chances of "upselling"

- Increase availability of technical assistance in the project design phase, so growers are less reliant on irrigation equipment companies.
- Make educational materials about existing weather, evapotranspiration, and soil moisture monitoring systems and their alternatives available as part of the program materials.
- For expensive monitoring equipment such as weather stations and telemetry, ask applicants to justify why existing monitoring tools such as CIMIS are not sufficient.

5. Lower program funding cap to \$300K per operation

- Keep the maximum grant award per project at \$100,000 to reach a greater number of farmers.
- Lower the cumulative SWEEP funding limit to \$300,000 per operation.

6. Convene water and irrigation experts to help CDFA align SWEEP with long-term sustainability objectives

- Convene a committee of irrigation experts, technical reviewers, and TA providers to advise CDFA on options for better addressing surface water efficiency and dual-irrigation methods in the program.

- Convene a meeting between SWEEP grant reviewers, TA providers, NRCS, Department of Water Resources staff and some of the Groundwater Sustainability Agencies to discuss how SWEEP can best support long-term groundwater sustainability objectives.

7. Further explore the barriers and opportunities for participation in southern California

- Host program feedback and development workshops in agricultural regions of southern California to better understand the barriers and opportunities for the program there.
- Consult with TA providers in regions with pressurized water from irrigation districts to evaluate the feasibility of quantifying the embedded energy in water use in those districts.
- Consult with Imperial Valley TA providers and the Imperial Irrigation District to work out an acceptable process for applicants using portable diesel irrigation pumps to establish their baseline GHG emissions, as well as to learn about their on-farm water efficiency program.

8. Prioritize outreach to and track participation by socially disadvantaged farmers

- Prioritize outreach and technical assistance to socially disadvantaged farmers, as well as track their participation in the program, as required by the Farmer Equity Act of 2017.

- Provide program outreach and application materials, including instructional videos, in multiple languages to reflect the demographics of California's diverse farming communities.
- Provide additional funding for TA providers serving socially disadvantaged farmers to increase one-on-one and bilingual assistance with the application process and assist successful applicants with project implementation and reporting.

9. Improve the reviewers' experience and impact on the program

- Lengthen the time reviewers have to complete their process and/or recruit more reviewers.
- Provide reviewers an opportunity to discuss program guidelines with CDFA staff and each other to ensure consistency in the scoring process.
- Convene a workshop for technical reviewers and TA providers after each round to gather feedback, troubleshoot challenges, and develop program improvement ideas.

10. Coordinate with NRCS and water districts to maximize SWEEP impacts

- Continue working with DWR and water districts to pilot integrated conveyance and on-farm efficiency projects.
- Coordinate program promotion and outreach with NRCS and offer a training to SWEEP-funded TA providers to learn about how growers can take advantage of both SWEEP and NRCS EQIP.

- Review SWEEP and EQIP’s program guidelines and matching fund requirements with NRCS to identify opportunities for alignment/synergy.

11. Develop and require irrigation management training for SWEEP recipients

- Require and pay for irrigation management training for grantees, specifically targeting the workers responsible for the day-to-day management of the irrigation systems, to ensure that SWEEP-funded equipment achieves maximum benefits on the ground.

Conclusion

Since 2014, SWEEP has proven itself to be a popular and effective climate change mitigation program with multiple benefits. But there is still ample opportunity to increase the program’s overall impact, improve producer participation and user-experience, and synergize the program with other critical efforts in the state to manage groundwater sustainably and build the resilience and health of our soils. We encourage CDFA to strongly consider the recommendations above to build on this already impressive program.



The California Climate and Agriculture Network (CalCAN) is a coalition of the state’s leading sustainable agriculture organizations and farmer allies. Since 2009, we have cultivated farmer leadership to face the challenges of climate change and to serve as the sustainable agriculture voice on climate change policy in California.

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Appendix A: Interview Questions for TA providers

1. What motivated you to apply to do technical assistance for this program? Why is this program important to your area's farmers?
2. How did your technical assistance workshop go? How many folks attended? How would you describe the impact?
3. How many of the attendees to your workshop applied to SWEEP?
4. Did you assist any applicants one-on-one outside the parameters of the workshop? If so, how many?
5. What was your experience like assisting folks?
6. How would you describe applicants' experiences with the application? The GHG and water-savings calculators?
7. How would you improve the application process?
8. How was your experience implementing this technical assistance award? How would you improve the way technical assistance awards are structured/administered?
9. Is there any other positive or negative feedback on SWEEP or technical assistance that you'd like to share?