From:	Brea Mohamed
To:	CDFA OEFI@CDFA
Subject:	ICFB Comments on SWEEP Draft RFA
Date:	Wednesday, September 12, 2018 3:34:00 PM
Attachments:	2018 09.12 ICFB Comments on SWEEP Draft RFA.pdf

Good afternoon,

Please find the comments submitted regarding the SWEEP Draft RFA.

Thank you,
Brea

Brea Mohamed
Executive Director
Imperial County Farm Bureau
1000 Broadway
El Centro, CA 92243
Office: (760) 352-3831
brea@icfb.net

Imperial County Farm Bureau

September 12, 2018

Office of Environmental Farming & Innovation
California Department of Food and Agriculture
1220 N Street
Sacramento, CA 95814
Sent via email to cdfa.oefi@cdfa.ca.gov

Comments on SWEEP Draft Request for Grant Applications

Dear CDFA Staff:

The Imperial County Farm Bureau (ICFB) appreciates the opportunity to comment on CDFA's State Water Efficiency and Enhancement Program Draft Request for Grant Applications for 2018. In preparation for these comments, we have consulted with the University of California Cooperative Extension staff who have worked with this program frequently in the past and have a strong understanding of our growing practices as well as the local growers who have applied for SWEEP funds in the past. We feel that the intent of this program is great by incentivizing water savings and greenhouse gas reduction. However, we have several concerns with how the program's requirements severely limit Imperial County. Many of these suggestions were stated at the CDFA Listening Session held on August 31, 2018, but we would like to provide them again in writing.

Imperial County has over 450,000 acres of farmable acres, and our portfolio of crops grown is quite diverse, including lettuces, alfalfa, broccoli, onions, carrots, sugar beets, bermuda, and much more. Factors like crop, field, soil type, and grower affect our varying and changing growing and irrigation practices. Our county has not had very many applications in the past for SWEEP funding, and currently, there have only been two local projects awarded grants. We hope that by working with the CDFA, SWEEP can become a program that is more compatible with our growing practices.

1000 Broadway, El Centro CA 92243 | 760 352 3831 phone | 760 352 0232 fax | info@icfb.net | www.icfb.net

Surface irrigation is widely used among Imperial Valley farmers. Surface irrigation relies on the gravity flow of water and does not use electricity; thus, there is no energy use baseline for applicants converting from surface irrigation to irrigation methods that conserve water but will now require energy use. In cases like this, it would be desirable to provide waivers for the energy reduction requirement and the requirement to submit the past twelve months of energy bills to come up with a GHG baseline. Another solution may be to show a comparison of available water conservation methods and a simple analysis that shows the chosen method will use less or cleaner energy than other options.

Additionally, Imperial Valley soil requires combined methods of irrigation to maintain soil productivity. Flooding events are required to leach salts; thus, we hope the program can recognize the need for that practice and the combination of practices like using both drip and flood irrigation.

Portable pumpback systems are a frequently used water conservation method in the Imperial Valley. Farmers typically move pumpback systems to a number of different fields when irrigating them at different times. Thus, it becomes hard to know how much energy is used on one specific field during a growing season. It would be beneficial in cases like this to be able to estimate energy use based on the number of irrigation events at all of the fields where the pumpback was used. Otherwise, an applicant is unable to show their baseline energy use in the required format by the program and ineligible to apply.

Because of the minimum lifespan requirements, we do not feel that SWEEP is supportive of crop rotation, which is an integral practice in the Imperial County. However, we think there could be a solution to this by allowing the use of funds from both SWEEP and EQIP on the same project. The Draft RFA explains that SWEEP funds cannot be combined with NRCS EQIP financial assistance. However, there is great benefit if the two programs could be combined. For example, SWEEP could assist with the funding of a long-term use pump while EQIP could assist to fund drip tape that would be used for a crop season and then removed or replaced when rotating a crop. Because of SWEEP's two-year minimum equipment life requirement, drip tape would not be covered when crops rotate. Thus, this combination of the two programs would provide a solution for growers.

Another suggestion that has been raised is to have a countywide allocation and competition. This would allow an even playing field and comparable applications instead of some counties competing with others. Our practices here are different than practices in other parts of the state. For example, very few growers have reservoirs, most growers' fields are spread out around parts of the county instead of being all together in one ranch, and electricity is not readily available to most fields without significant capital investment.

An additional geography-related suggestion is to match reviewers with applicants from the same region when possible in order to allow for there to be a better understanding of the culture and practices of the area where the applicant is from.

A part of the grading criteria for SWEEP is whether a project is benefiting a disadvantaged community. This is determined based on the location of the project. It may be useful to allow the location of the business to be used as well.

Thank you again for the opportunity to provide comments. We look forward to working more with CDFA staff in the future on this program and others. We hope that Imperial County farmers are better able to utilize the funding opportunities provided by SWEEP in the future. Please feel free to contact me if you have any questions.

Sincerely,

BMohamed

Brea Mohamed
Executive Director
Imperial County Farm Bureau

From:	Gabriela Bonilla
To:	CDFA OEFI@CDFA
Cc:	Todd Burkhalter
Subject:	CDFA SWEEP Public Comment
Date:	Wednesday, September 12, 2018 1:46:55 PM
Attachments:	20180907_Avsonic Update Gabby Bonilla__Water Associates.pdf Public Comment Submission for CDFA SWEEP.pdf

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Good afternoon,

Thank you for permitting us to submit our comment. Attached is a pdf and a slideshow that explains the purpose of our public comment.

Looking forward to communicating with all of you. Have a great day,

Gabriela Bonilla
Water Associates

Public Comment Submission for CDFA SWEEP

September 11, 2018

To Whom It May Concern,

Thank you for the opportunity to comment on CDFA's 2018 State Water Efficiency and Enhancement Program. My name is Gabriela Bonilla and along with Todd Burkhalter, we would like to start a conversation about the potential expansion of the eligibility section in the program. I work for an agricultural management company and my role is to encourage our clients to meet conservation needs and serve them in their funding needs. Todd Burkhalter is the Business Manager Avsonic team, an efficient dairy soaker product used by dairies that shows promising water savings and reduction in GHG.

Currently under the SWEEP program, only an agricultural operation can apply to receive potential funding. As stated in the Draft RFA, according to the Food and Agricultural Code section 77911, *agricultural operations are a row, vineyard, field and tree crops, commercial nurseries, nursery stock production, and greenhouse operations producing food crops or flowers* and limits dairies to apply. We see a potential increase in water savings and reduction in GHG if we can allow dairies to apply and present other projects other than the conversion of a high-water usage irrigation system to a more efficient one on their fields.

In the past rounds, CDFA has accepted SWEEP applications from dairies that pertained to projects that directly affect a certain agricultural field. Usually, the fields owned/leased by dairies for feeding are irrigated with a mixture of groundwater or surface water and the water used to clean the cow feeding area. In the feeding area, most of the water is used for two reasons. One reason is to flush out the manure present on the feeding floor and direct it to the lagoons. The second reason is the water used in the soaker lines for evaporative cooling of the animals. Both sources of water is directed to a dairy lagoon to be later pumped to irrigate the fields and the same routine is done multiple times. The Alternative Manure Management Program provides funding to incentivize dairies to convert their flushing systems to scrape but what it doesn't consider is the potential water savings and the reduction in greenhouse gasses from incentivizing dairies to convert their soaker lines to a more efficient method.

Most dairies current use a spray nozzle to soak the animals and reduce heat stress on the cows inside the feeding area. The soakers lines, numbering between 100 - 500 nozzles per dairy, are scheduled to turn on via electronic controller when the temperature exceeds 78 degrees. As the cows are not held in the feeding area, the soakers run the duration of scheduled time despite an animal not being present. The scheduled delivery time ranges from 6 to 12 minutes and can be activated up to 50 times in a 24-hour period. Each nozzle without a cow present is wasting water and a solution to the problem is a smart valve to monitor the use of individual cows. The Avsonic soakers utilize a sensor to detect the animal and turn on the water flow. This works in conjunction with the existing controller and schedule so that only nozzles with a cow present turn on.

Avsonic has gathered positive feedback, not only by maintaining the cattle at a low stress level, also in reduction of wasted water and electricity savings. Avsonic, and other similar products, are a great asset to this program because water savings and reduction in GHG can be determined by gathering pumping records, diagrams, flowmeter data. As stated in the Avsonic slideshow attached to this comment, there are potential water savings up to 60% and less water in the lagoon used to irrigate fields. Also, because the sensors will turn on the soaker only when a cow is present, the pumping of water gets reduced dramatically, saving energy.

We believe that this type of product should be considered for this program and include dairies to apply to further meet CDFA SWEEP program's goals. Please review the attached slides which provide information of the Avsonic product.

Thank you for your time and we look forward to your response and to the future of the program.

Sincerely,

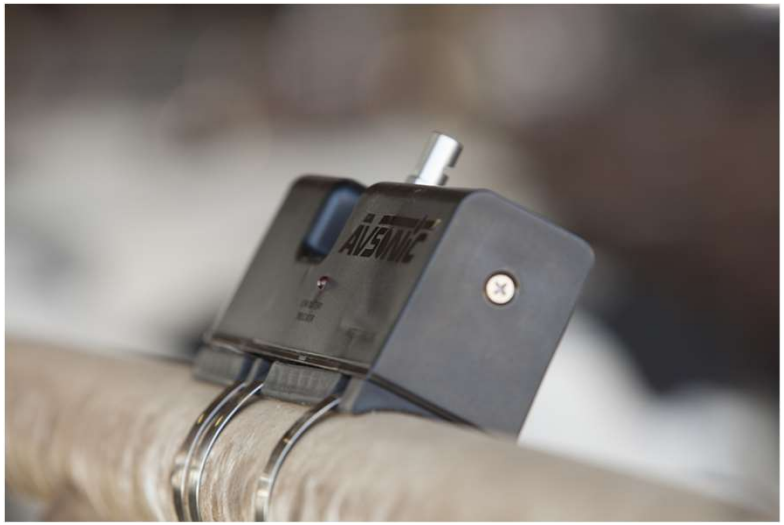
Gabriela Bonilla
Water Associates

Todd Burkhalter
Burk Tech Inc.

Avsonic Value Proposition

- Preserve Water in Soaker Lines, the Most Precious Resource for Evaporative Cooling, and the Most Effective Cattle Cooling Method
- Lower Electricity Costs to Pump the Water
- Reduce Effluent Pumped to Lagoon
- Protect Feed from Water Damage

Installation



Simple Installation Process

- Battery Powered – No Wires
- Gasket Mount to Water Supply Pipe
- Standard Pipe Sizes
  - 2, 2.5 and 3 Inch Round
  - 2 Inch Square Tubing
- Standard ¼ NPT Ports Accept Most Existing Soaker Nozzles
- Three Worm Clamps Hold Firmly in Place

Operation

1. Dairyman Sets Existing Soaker Line Controller

- Thermometer - Temperature Activates Water Flow
- Timer Manages Frequency and Duration of Soaker



2. Avsonic Unit

- Detects Water Pressure - System Searches for Cow
- Ultrasonic Sensor Detects Cow
- Internal Valve Opens to Cool Animal


Water Use, Expected Savings and Test Results

DAILY SOAKER LINE WATER USE	1,000 Cows LOW Use	1,000 Cows HIGH Use	2,500 Cows LOW Use	2,500 Cows HIGH Use	5,000 Cows LOW Use	5,000 Cows HIGH Use
Gallons/Day	18,000	56,000	45,000	140,000	90,000	280,000
Predicted Savings at 60% Reduction Rate	10,800	33,600	27,000	84,000	54,000	168,000

Kansas State 2014

Test Results at Kings County Dairy

- Milking 1,200 Cows
- Test Duration Six Weeks
- Area Tested: 200 ft. Pen with 150 Animals
- 60% of Avsonic Autosoakers OFF During Peak Day Hours
- 22 Gal Saved/Cow/Day x 150 Animals x 42 Days = 138,600 Gals.

2018 Summer Testing and Improvements

Improvements for Rev 2.0

- Valve Flow Increased
- Internal, Field Cleanable Filter to Resist Contaminants and Clogging
- Manual Override for Continued Cooling upon Power Loss
- Improved Battery Life
- Replaceable Battery Cartridge to Reduce Maintenance Time
- Integral PCB and Sensor Assembly to Reduce Manufacturing Process
- Pressure Sensor Improved for Faster, More Accurate Switching

Measuring the Value Proposition

Water: Anecdotally, it is Estimated 60% of Water in the Pen Tested was Saved

Electricity: Though Some May Draw a Line Connecting Water Savings to Electricity Savings, We Look Forward to Assistance Establishing Empirical Data to Support those Numbers

Effluent: Soaker Lines Produced Less Water for Lagoon. Conversation with Engineers at Separator Manufacturer Concluded no Impact on Separator Operation as Soaker Water is Unavailable during Winter

Feed: The Conditions of the Feed, Particularly the Dry Condition Preferred by Cows, was Demonstrable

Feedback

Animal Interaction: Cows Responded Well to the Avsonic units. On Day One, some were confused by the Intermittent On/Off action. They grew used to it quickly and Future Designs do not Feature High Frequency Operation

Dairyman: The Dairyman liked the System, specifically the Water Saving Element. He commented this is the first system like this in the World and was happy it was on his Dairy. Further comment included an approval of the Price Point and Continued Performance throughout testing period.

From:	Russell Frink
To:	CDFA OEFI@CDFA
Cc:	Jennifer Spaletta
Subject:	Comments on 2018 SWEEP RFA
Date:	Tuesday, September 11, 2018 10:22:55 AM
Attachments:	NSJWCD Comments on 2018 SWEEP Grant.pdf

Attached are comments on the 2018 SWEEP RFA submitted on behalf of North San Joaquin Water Conservation District.

Russell Frink
Attorney-at-Law
Russell@spalettalaw.com

SPALETTA LAW PC
T: 209-224-5568
F: 209-224-5589
C: 530-301-5074
Mailing: PO Box 2660 Lodi CA 95241
Office: 225 W. Oak Lodi, CA 95240

North San Joaquin Water Conservation District

PO Box E, Victor CA 95253
498 East Kettleman Lane, Lodi CA
209 368 2101 nsjgroundwater.org

September 14, 2018

Via Email <cdfa.oefi@cdfa.ca.gov>

California Department of Food and Agriculture
1220 N Street
Sacramento, CA, 95814

RE: Comments on SWEEP 2018 Request for Applications

North San Joaquin Water Conservation District (NSJWCD) has reviewed the California Department of Food and Agriculture's (CDFA) SWEEP 2018 Request for Applications (RFA) and is providing the following comments for consideration.

Background

North San Joaquin Water Conservation District (NSJWCD) is a California Water Conservation District that is comprised of 150,000 acres of productive agricultural lands in the north-eastern portion of San Joaquin County. NSJWCD's mission is to provide deliveries of surface water to its constituents in lieu of groundwater pumping, thus promoting the long-term viability of the groundwater source underlying its lands.

NSJWCD and 19 agricultural operations located within the District were selected to receive grant funding by both CDFA and Department of Water Resources (DWR) following the 2017 Agricultural Water Use Efficiency & State Water Efficiency and Enhancement Program Joint Request for Applications. Although the landowners who were selected for funding were unable to move forward with the SWEEP-funded projects (the District-sponsored portion of the project was unable to secure necessary matching funds), there is continued interest by landowners within NSJWCD to partner with CDFA on projects to increase water use and energy efficiency.

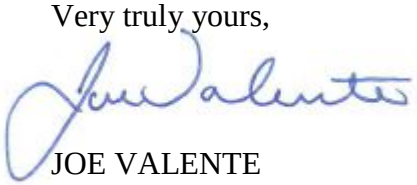
Comments on SWEEP 2018 Request for Applications

The SWEEP 2018 Request for Applications includes key changes from the 2017 SWEEP Program that NSJWCD believes will encourage greater participation from landowners. For example, the 2017 Pilot SWEEP Program required that landowner-recipients cease all use of groundwater on their property after project implementation, except in emergencies. In contrast, the Draft SWEEP 2018 RFA provides additional consideration for applications from landowners within critically over-drafted groundwater basins for projects that reduce groundwater pumping, regardless of whether those landowners continue to use groundwater to irrigate in certain years.

In NSJWCD, landowners are only able to receive surface water supplies in wet or normal water year types and must rely on surface water in dry and critically-dry years. There are many other similarly-situated landowners in other parts of the state. In addition to the water and energy savings that will be realized through implementation of Irrigation Water Management practices, encouraging this category of irrigators to install modern irrigation systems that are capable of receiving both surface and groundwater will have other benefits. By replacing groundwater pumping with surface water deliveries, the landowners will perform in-lieu recharge to offset groundwater level declines. Projects that address groundwater level decline without removing agricultural land from production will help minimize the economic impact of complying with the Sustainable Groundwater Management Act (SGMA). Furthermore, increasing or stabilizing groundwater levels will reduce power consumption in years when groundwater is being pumped because it will be pumped from shallower depths. Lastly, projects that increase groundwater levels will benefit domestic well owners who will be less-likely to need a new well drilled.

NSJWCD is supportive of the changes that have been made to the SWEEP 2018 RFA and will encourage its landowners to participate.

Very truly yours,



JOE VALENTE
President of the Board of Directors

From:	Beth Smoker
To:	CDFA OEFI@CDFA
Subject:	CFJC comments re: HSP and SWEEP RGAs
Date:	Monday, September 10, 2018 10:58:23 AM
Attachments:	CFJC_EFA_SAP_Letter_Sept2018.pdf

Dear OEFI,

Please find comments on the HSP and SWEEP RGAs from the California Farmer Justice Collaborative (CFJC). CFJC works to dismantle historic and ongoing racism within agriculture, creating fair opportunities for the growing population of farmers of color in California.

Please let me know if you have any further questions.

Beth
Co-Facilitator
California Farmer Justice Collaborative

--
Beth Smoker
Policy Consultant
PAN North America
beth.smoker@panna.org
916-834-4710

September 10, 2018

Office of Environmental Farming and Innovation
California Department of Food and Agriculture
1220 N Street
Sacramento, CA 95814

RE: Healthy Soils Program and State Water Efficiency and Enhancement Program Draft Requests for Grant Application (RGAs)

Dear OEFI,

Thank you for the opportunity to provide comments on the draft RGAs for both the Healthy Soils Program and State Water Efficiency and Enhancement Program**.** On behalf of the California Farmer Justice Collaborative and our member organizations and individual farmers, including Agriculture & Land-Based Training Association, California FarmLink, Community Alliance for Agroecology, Farms to Grow, Kitchen Table Advisors, Mandela Partners, National Hmong American Farmers and PAN North America, we respectfully ask that **the Farmer Equity Act of 2017 (Section 510 of the Food and Agricultural Code) be applied to these two programs**.

The California Farmer Justice Collaborative's (CFJC) mission is to ensure that farmers of color are empowered to directly participate and effectively lead in building a fair food and farming system in California. We unite farmers, advocates, and other allies to challenge historic and ongoing racism, and other forms of structural oppression, in order to create the comprehensive change needed to build such a system.

Last year, the California Legislature passed, and Governor Jerry Brown signed, The Farmer Equity Act (AB 1348, Aguiar-Curry), FAC 510 et seq, noting among other findings that "farmers of color have historically not had equitable access to land and other resources necessary to conduct farming in California, and that legacy of prejudice persists." This Act **requires** CDFA and coordinating agencies to better include socially disadvantaged farmers and ranchers in their policies and programs--and HSP and SWEEP are no exception.

California has the largest population of Asian-American farmers and ranks third in the nation of Hispanic farmers. Demographic trends in California agriculture –both the aging white farmer population, and the growing proportion of farmers of color in the state – change the dynamics of who needs resource support and how it should be provided. Socially disadvantaged farmers make up approximately 21% of farmers in the state, according to the last agriculture census. For all of these reasons, socially disadvantaged farmers and ranchers must be included within CDFA's Climate Smart Ag initiatives. The inclusion of these farmers and ranchers can be addressed as follows:

Healthy Soils Program

Add Socially Disadvantaged Farmers and Ranchers to the Evaluation Criteria with a Score of 10 points. As of October 2017 with the passage of the Farmer Equity Act, CDFA is required to ensure socially disadvantaged farmers and ranchers have better access to resources they provide to farmers in the state. Equity means giving those that have been historically left behind opportunities to step onto a level playing field. CDFA needs to include socially disadvantaged farmers and ranchers as part of their Evaluation Criteria with a score of 10 points (a few points can be pulled from each category to keep a sum of 100 points). As defined in FAC 512 et seq, socially disadvantaged farmers or ranchers include all of the following:
(1) African Americans
(2) Native Indians
(3) Alaskan Natives
(4) Hispanics
(5) Asian Americans
(6) Native Hawaiians and Pacific Islanders

It is important to understand that "severely disadvantaged communities" and "Socially Disadvantaged Farmers and Ranchers" are not one in the same. "Severely disadvantaged communities" are communities defined based on financial parameters and *any* farmer or rancher that lives within a DAC would be able to check that box. Whereas, "Socially

Disadvantaged Farmers and Ranchers" are defined based on race and apply directly to the individual farmer that is applying for the grant.

State Water Efficiency and Enhancement Program

Add Socially Disadvantaged Farmers and Ranchers to the Additional Criteria options. Similar to the Healthy Soils Program, CDFA must add socially disadvantaged farmers and ranchers as part of their Additional Considerations within the Review and Evaluation Process for grant awarding.

Further Recommendations

Provide Adequate Outreach To Socially Disadvantaged Farmers & Ranchers. It is imperative that CDFA provide effective and culturally appropriate outreach to farmers of color about these programs. Appropriate outreach materials may include for example, flyers, sample applications, and radio segments. Materials should be in multiple languages and should help simplify their application process. Cultural competence when working with a diverse population of farmers of color is essential.

The California Farmer Justice Collaborative wants to thank CDFA for their hard work and dedication to addressing the now ever-present struggle to mitigate climate change and the effect it has on farmers. The Climate Smart Agriculture programs are helping move us in the right direction and it is crucial we carve out space for our socially disadvantaged farmers and ranchers within these programs.

Please feel free to contact Beth Smoker at beth.smoker@panna.org if you have any questions.

Sincerely,

B Smoker

Beth Smoker
Co-Facilitator, California Farmer Justice Collaborative

From:	Michelle Y. Merrill
To:	CDFA OEFI@CDFA
Subject:	comment on SWEEP draft RGA
Date:	Wednesday, September 12, 2018 3:51:34 PM

Dear CDFA,

As a concerned Californian, I urge you to incorporate the recommendations of CalCAN into the upcoming round of SWEEP. Specifcially, I support their recommendations to:

1. Increase funding for technical assistance and improve the application experience for farmers.
2. Convene irrigation experts, TA providers, and representatives from GSAs, water districts, and NRCS to help CDFA align SWEEP with long-term groundwater sustainability objectives and explore the barriers and opportunities for greater participation in southern California.
3. Coordinate with those same stakeholders to improve SWEEP outreach, technical assistance, and irrigation management training.

Thank you for working to make SWEEP a better tool for conserving water and energy in California's agricultural sector.

Sincerely,

Michelle Y. MERRILL, Ph.D.
Perplexed Primate.org , founder Novasutras.org
seeking new opportunities in Consulting and Higher Education for Sustainability
latest publication: Connecting Competences and Pedagogical Approaches for Sustainable Development in Higher Education *Sustainability* **2017**, *9*(10), 1889; doi:10.3390/su9101889
Lead Editor, *Education and Sustainability: Paradigms, Policies and Practices in Asia*. Singapore: Routledge. ISBN: 978-1-138-68141-5
National Ecology and Environment Foundation (India, neef.in) Advisory Board Member

"The major problems in the world are the result of the difference between how nature works and the way people think."
~Gregory Bateson

From: Rash, Wendy - NRCS, Vacaville, CA
To: CDFA OEFI@CDFA
Subject: comments on SWEEP RFA
Date: Wednesday, August 15, 2018 5:27:28 PM

Hello,
I have a few comments on the draft SWEEP RFA:

Please include Conservation Practice Standard 327, Conservation Cover, in your list of soil management practices that increase soil water holding capacity. In permanent crops NRCS California uses this standard rather than the 340 Cover Crop standard to plan groundcover vegetation in the orchard or vineyard floor.

Consider approving conservation practice standard 449, Irrigation Water Management, as an irrigation training option for growers. If they are implementing a 449 practice as part of an NRCS-funded conservation plan, they will receive technical assistance for irrigation efficiency specific to their site and irrigation system.

Clarify whether EQIP funds can be used on complementary or supporting practices on the same APN, provided the applicant is not "double-dipping" and receiving funds for the same practice from 2 sources. For example, if funds are requested from SWEEP for an irrigation system and NRCS is funding cover crops or irrigation water management on the same property, is that considered the same "project"?

Thanks,
Wendy

:<>:<>:<>:<>:<>:<>:<>:<>:<>:<>:<>:<>:<>:<>:<>:
Wendy Rash
District Conservationist, USDA-NRCS
Vacaville Service Center
810 Vaca Valley Parkway, Suite 104
Vacaville, CA 95688
(707) 448-0106 ext. 111
Fax (844) 206-7071
Wendy.Rash@ca.usda.gov

From:	Ruth M Dahlquist-Willard
To:	CDFA OEFI@CDFA
Subject:	Comments on Draft SWEEP RGA from UCCE Fresno County
Date:	Wednesday, September 12, 2018 4:45:05 PM
Attachments:	Comments on SWEEP RGA_UCCE Fresno.pdf

Dear OEFI Staff,

Please find attached my comments for the SWEEP Draft RGA. Thank you for your continued support of California farmers!

Best regards,
Ruth Dahlquist-Willard

Ruth Dahlquist-Willard, Ph.D.
Small Farms and Specialty Crops Farm Advisor
UC Cooperative Extension, Fresno and Tulare Counties
phone: 559-241-7513
fax: 559-241-7539
http://www.sfp.ucdavis.edu

University of California
Agriculture and Natural Resources

September 12, 2018

Office of Environmental Farming and Innovation
California Department of Food and Agriculture
1220 N Street
Sacramento, CA 95814

Dear OEFI Staff,

Thank you for the opportunity to provide comments on the draft RGA for the State Water Efficiency Enhancement Program (SWEEP). This program has provided substantial benefits to small-scale farms in Fresno County by reducing energy costs, water use, and labor costs through conversion to drip irrigation systems and repairing or replacing older pumps. The University of California Cooperative Extension (UCCE) in Fresno County has received two technical assistance grants from CDFA to assist farmers with SWEEP applications, and 19 of the small-scale, socially disadvantaged farmers we have assisted have received funding. We are excited that SWEEP has received funding for this year and look forward to continuing to provide technical assistance for farmers.

Based on our experiences in assisting small-scale and socially disadvantaged farmers in applying for SWEEP as well as project implementation, I would like to provide feedback on the process of implementation of SWEEP projects for small farms. There have been many comments on the difficulty and complexity of the application process. The technical assistance grants do help with this, as organizations offering technical assistance can receive support for staff to work with farmers one on one to complete the application online. However, after a farmer receives SWEEP funding, it is also necessary to assist them with the implementation of their project including invoicing to CDFA, coordination with pump and irrigation companies, and verification of completion.

It is far beyond the capacity of limited-English and immigrant or refugee farmers to deal with the paperwork required for reimbursement for project expenses. We have been assisting them with their invoices, but it is sometimes also beyond our capacity to satisfy the requirements of the SWEEP accounting and invoicing process. I understand that accurate accounting is necessary because of audits, and to avoid fraud and abuse of the SWEEP program. However, the level of detail and the time required to be reimbursed is a major barrier to small-scale growers implementing their projects. Since the SWEEP program is intended to benefit small-scale growers as well as larger ones, I would suggest that the invoicing and reimbursement be modified to be more feasible for them.

For example, the farmers we have worked with begin their projects with a budget that was created based on the quotes from the irrigation and pump companies in the original application. After the project is installed, the farmer receives a final billing invoice from the irrigation or pump company. However, the final invoice does not always exactly match the quote, because things come up that have to be done slightly differently.

When the pump company pulls out the pump, they may find that another part is worn out and needs to be replaced, and they are not able to know that until they have started the work. When the irrigation company is installing the system, perhaps it takes less time to trench the pipe than they originally estimated, but the price of one of the parts has gone up since the original quote from several months ago that was used for the SWEEP application. These are small changes that result in relatively minor differences in the budget. They have no effect on the overall amount of the grant, but they result in differences between the three budget categories (supplies, equipment, and contractual/labor).

Every time there is a change to the budget that requires moving funds between supplies, equipment, and labor, a line item shift and a revised budget are required. I have assisted several growers whose final billing from the irrigation company does not exactly fit into the amounts left in supplies, equipment and labor. The project is finished, and the irrigation system is installed. It cost almost exactly what was originally estimated. But, we frequently exchange multiple emails and phone calls with the grant analyst over how to put the correct amounts into the line item shift form and revise the budget. Often the invoice sent by the company is not considered acceptable, and we have to request and wait for another one. Meanwhile, the grower is waiting to be reimbursed. It already takes at least six weeks to receive a reimbursement check, and the deliberations add extra time. These growers do not have a lot of extra money up front, and sometimes they need the check to come as soon as possible.

One grower had a final invoice that was $1,830.16 less for labor than originally quoted, with a corresponding increase for materials. It should be possible to move this amount with a line item shift from labor to supplies and equipment. For less than a $2000 difference, on a grant that totals about $64,000, she was asked to get a new invoice from the irrigation company with additional supplies itemized, and I spent over a week extensively discussing her final invoice with the grant analyst.

I deeply appreciate the time the CDFA grant analysts have taken to help these farmers complete their invoicing process accurately. I would like to offer the following suggestions to make the invoicing and reimbursement process more feasible for small-scale farmers:

1) Allow recipients to move funds between supplies, equipment and labor without a line item shift if the amounts being moved are less than some percentage of the total award (such as 5% or 10%). Many granting agencies do this, and I know that CDFA sometimes allows moving funds between categories at the end of an award if the difference is less than $2,000. Then a line item shift could be required only if the amount being moved was over 10% of the total award, or a set dollar amount (perhaps excluding any increases in labor costs). This would allow for small differences in pricing that normally occur during project implementation, several months after the quote was generated. In my experience, the final cost is almost never exactly the same as the quote.

2) Merge supplies and equipment into one category for materials. It seems that SWEEP recipients are required to use the same process as for the other CDFA grants to institutions such as universities or nonprofits that must account for permanent equipment versus expendable supplies. When the recipient is an individual farmer who does not have a sponsored programs office or an accountant, perhaps there could be a process that is easier for individuals to complete. Breaking down costs between supplies and equipment for an irrigation system often does not make sense, and the breakdown is arbitrary anyway. Creating one category would simplify invoicing considerably.

3) Provide guidance up front on the required format for invoices to pump and irrigation companies, with an example invoice or a list of guidelines. If we all know from the beginning exactly what is required, it will save everyone valuable time.

I would also like to express my support for the excellent and thorough analysis and suggestions submitted by the California Climate and Agriculture Network (CalCAN). I strongly agree with their recommendations for improving technical assistance, particularly the importance of supporting one-on-one assistance with applications and prioritizing assistance for socially disadvantaged farmers.

Thank you for your time in considering these comments and for providing environmental and economic benefits to California farms.

Best regards,

Ruth Dahlquist-Willard
Small Farms and Specialty Crops Advisor
University of California Cooperative Extension, Fresno and Tulare Counties

From: David Criswell
To: CDFA OEFI@CDFA
Subject: Draft Sweep RGA Question
Date: Thursday, July 26, 2018 12:00:26 PM

Hello,

I wanted to clarify something with the CDFA regarding the draft SWEEP Request for Grant Application. Currently, the draft states that governmental organizations are ineligible. It also states that disadvantaged communities will receive additional consideration. I would like to inquire if Native American Tribes or Tribal agricultural enterprises/entities will be considered eligible for the grant application. I am aware of several Tribal communities that would benefit highly from basic water efficiency and management improvements, increasing water savings in their areas. Thank you.

Cheers,

David Criswell, E.I.T.
Associate Engineer
Natural Resources Consulting Engineers, Inc.
131 Lincoln Ave, Suite 300
Fort Collins, CO 80524
(970) 224-1851
dcriswell@nrce.com

From:	Brian Kolodji
To:	CDFA OEFI@CDFA
Subject:	Questions posed online at SWEEP Listening Session 08312018
Date:	Friday, August 31, 2018 10:47:31 AM
Attachments:	SWEEP Listening Session Qs 08312018.docx

These questions are from Brian Kolodji at Cell: 713 907 8742 email: bkolodji@sbcglobal.net

I am working along with UCC Kern County COOP Dr. Brian Marsh.

Questions attached in word document.

The below questions were submitted during the SWEEP Listening Session on 8/31/2017 by Brian Kolodji, cell phone number (713) 907-8742, email address bkolodji@sbcglobal.net

Q: What if irrigation savings are because of increased water utilization efficiency due to increased carbon (CO2) uptake due to Free Air Carbon Enrichment?

Q: Open Air Carbon Enrichment in a proposed agriculture application will reduce irigation water requirements by up to 30%

Q: How can the tool proposed by SWEEP accomodate these saving for this project using carbon enrichment?

Q: How can the CARB GHG Tool credit increased yield and biomass (estimated at minimum 25% increase) from carbon

enrichment, as well as irrigation water pump use reduction?

Q: How will these comments be addressed? Are they entered into the Cue for this meeting? Are they even entered into the public comments to be considered in the draft SWEEP solicitation? Will a response be given to the questioner at bkolodji@sbcgloabal.net?

A: Thank you - these comments submitted here will be considered in finalizing the application guidelines. It would be appreciated if comments were also sent to the cdfa.oefi@cdfa.ca.gov email address so that we are certain that your comment is captured.

From:	John Weddington
To:	CDFA OEFI@CDFA
Subject:	SWEEP RFA comment
Date:	Tuesday, September 04, 2018 2:07:03 PM

Hello:

I asked a question on-line regarding stormwater recapture, but I could not hear the response.

Is offsite stormwater (for example, water coming from the neighbor's field, or even a paved road, but running along the project field) be captured for recycling on the crop or storage in a pond for later use?

Regards,

John Weddington
559-278-8663

From:	Brian Shobe
To:	CDFA OEFI@CDFA
Cc:	Gunasekara, Amrith@CDFA; Joshi, Geetika@CDFA; Lester Moffitt, Jenny@CDFA; Jeanne Merrill
Subject:	SWEEP draft RGA Comment Letter and Policy Brief - CalCAN
Date:	Tuesday, September 11, 2018 3:33:01 PM
Attachments:	SWEEP RGA Comment Letter and Policy Brief - CalCAN - 9-11-18.pdf

Dear OEFI Staff,

Thank you for the opportunity to comment on the SWEEP draft RGA.

Please find attached our comment letter, which includes a Policy Brief on the SWEEP Program we're publishing today.

I hope to schedule a time for us to discuss our findings and recommendations with you in the near future, but will follow up early next week after we've all made it through the GCAS this week.

Sincerely,
Brian

--
Brian Shobe
(Pronouns: He/Him/His)
Associate Policy Director
California Climate & Agriculture Network (CalCAN)
910 K St, Suite 300, Sacramento, CA 95814
Cell: (916) 856-8596
Office: (916) 441-4042

CalCAN
CALIFORNIA CLIMATE & AGRICULTURE NETWORK

Office of Environmental Farming and Innovation
California Department of Food and Agriculture
1220 N Street
Sacramento, CA 95814

September 11, 2018

Re: SWEEP Draft Request for Grant Application (RGA)

Dear OEFI Staff,

Thank you for the opportunity to comment on this draft RGA. Our comments reflect our vision of a program that maximizes water and energy savings, provides producers with a positive experience, and further elevates CDFA's role as an innovative and effective agency.

We thank OEFI staff for proposing some significant improvements to the program guidelines, application, and application process, which we detail in our SWEEP 2018 draft RGA comments (please see attached).

There are still a number of ways the program must be improved in order to achieve its full potential. We recently published the attached SWEEP Policy Brief summarizing findings and recommendations for the program based on a combination of program data and interviews we conducted with technical assistance providers, technical reviewers and farmers.

Most significantly, we heard from technical assistance providers and grant reviewers that SWEEP may be rewarding unsustainable groundwater pumping in some instances. These issues may be addressed by better understanding opportunities for the state to incentivize dual irrigation systems and integrated management of surface and groundwater.

To better understand these issues, we strongly suggest that CDFA convene a meeting of SWEEP grant reviewers, technical assistance providers, NRCS, Department of Water Resources staff and some of the Groundwater Sustainability Agencies to discuss ways to support efficient irrigation management through SWEEP in ways that meet the goals of the program and positively contribute to sustainable groundwater management.

SWEEP is an important program that is in high demand from farmers as they grapple with high water costs and water insecurity. Addressing the program's impacts will be key to the program's future successes.

We look forward to discussing these issues with you further.

Cheers,

Jeanne Merrill, Policy Director
jmerrill@calclimateag.org

Brian Shobe, Associate Policy Director
brian@calclimateag.org

To: OEFI staff, CDFA
Fr: Brian Shobe, CalCAN
September 11, 2018

RE: SWEEP 2018 draft RGA comments

A number of important improvements have been made to the draft RGA. They include:

1. Extending the application period from six weeks to eight weeks. For future rounds, we would like to see that extended to 12 weeks.
2. Planning for a November through January application period – a more convenient time for most producers.
3. Maintaining the $100,000 project cap, which likely contributed to a greater number of smaller and mid-scale operations participating in the program in Round 6, resulting in awards being fairly evenly distributed across farm scales.
4. Simplifying the process for determining whether a project is serving a severely disadvantaged community.
5. Adding language to encourage applicants currently utilizing surface water to flood irrigate crops to maintain flood irrigation infrastructure to facilitate groundwater recharge.
6. Improving the user-friendliness of the budget worksheet.

These proposed changes address a number of concerns raised by stakeholders in previous rounds and will increase producer interest and participation in the program. Thanks to the OEFI staff for your responsiveness.

In addition to the recommendations in our SWEEP Policy Brief (see attached), we suggest the following changes:

- **Restore advance payment eligibility to all grant recipients**
  All grant recipients used to be eligible for advance payments in SWEEP. Many farmers, regardless of their location, have a hard time making an upfront investment of tens of thousands of dollars. Most farmers already face a cashflow challenge at some point in the year as they pay for months of inputs but have no harvest to earn revenue from.

- **Help applicants write better applications by giving them more clear scoring criteria**
  The RGA does not indicate how reviewers score applications on the RGA's five-point scale for "feasibility and merit of proposed project and design" or "reasonableness of budget." Providing guiding questions or scoring rubrics would help applicants assess the strengths/weaknesses of their proposals and improve the quality of their application.

Lastly, as we discussed in more detail in our Healthy Soils Program RGA comment letter, we recommend the following to ease farmer participation in the programs:

- **Allow real-time responses to questions submitted during the application period**
- **Ensure the new platform allows applicants to share applications with TA providers**
- **Provide a multilingual outreach toolkit (e.g. flyer, FAQ, and sample application)**

CalCAN
CALIFORNIA CLIMATE & AGRICULTURE NETWORK

POLICY BRIEF

Climate Smart: Saving Water and Energy on California Farms

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

Authors
Brian Shobe, Associate Policy Director
Jeanne Merrill, Policy Director

September 2018

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 2014-2017[2] 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

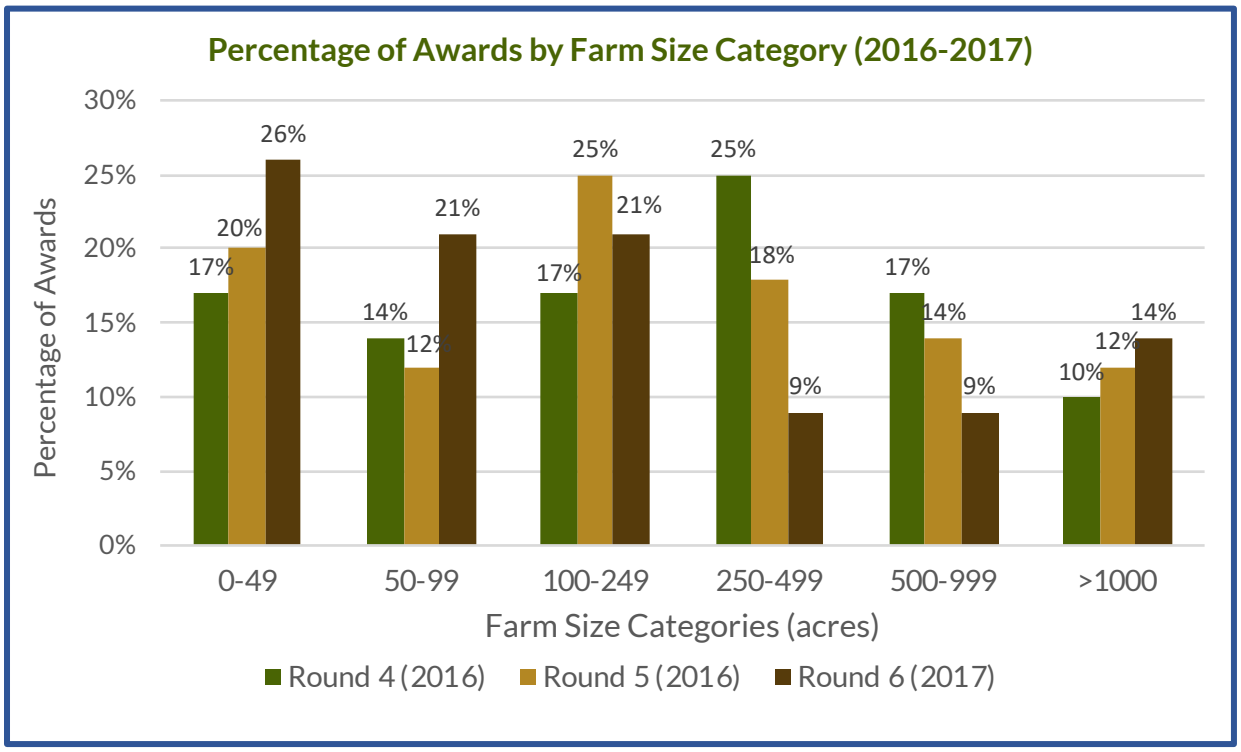
1. Fresno - 87	12. Santa Barbara – 16	23. Santa Clara – 4
2. Tulare - 70	13. Yolo – 15	24. Riverside – 3
3. Butte - 54	14. San Joaquin – 11	25. San Benito – 3
4. San Luis Obispo - 51	15. Stanislaus – 10	26. Ventura – 3
5. Kern - 42	16. Madera – 10	27. Los Angeles – 2
6. Monterey - 38	17. Tehama – 8	28. 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. Tuolomne – 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 estimates[9] 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%
Cover Cropping	35%
Compost Application	33%
Mulching	27%
Resource Conserving Crop Rotation	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.

CalCAN
CALIFORNIA CLIMATE & AGRICULTURE NETWORK

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?