RECOMMENDATIONS OF THE AD HOC ADVISORY GROUP ON THE STATE WATER EFFICIENCY AND ENHANCEMENT PROGRAM

May 2021

CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE

PREPARED BY:

The California Department of Food and Agriculture, Office of Environmental Farming and Innovation and the Sacramento State, Consensus and Collaboration Program

DRAFT FOR PUBLIC COMMENT

Contents

Front photograph: In-field weather station funded through the State Water Efficiency and Enhancement Program

Executive Summary

The California Department of Food and Agriculture (CDFA) initiated the State Water Efficiency and Enhancement Program (SWEEP) to provide financial incentives to agricultural operations to implement irrigation projects that result in water savings and greenhouse gas (GHG) emission reductions. Since 2014, SWEEP has awarded $81.1 million, with more than $52.8 million in matching funds contributed by awardees, to over 800 projects throughout the state of California. Cumulatively covering over 137,000 acres of agricultural land, these projects, have an estimated GHG reduction of over 81,000 metric tons of CO_2 equivalent annually and an annual projected water savings of 117,000 acre-feet.

In May of 2020, a group of stakeholders requested of CDFA to form an advisory group to further evaluate SWEEP. Mentioning rapidly improving technologies and the shifting regulatory environment and the fact that SWEEP can draw on the past six years of implementation experience, the request proposed convening experts to develop recommendations on possible updates and adjustments to SWEEP.

In response to this request, CDFA's Environmental Farming Act (EFA) Science Advisory Panel (SAP) formed an Ad Hoc Advisory Group (AAG) in late 2020 to develop recommendations addressing the following questions about SWEEP:

- The program's ability to help farmers improve water use efficiency – what's working well and what might the program seek to improve? How might any future program evolve to help farmers address new resource management challenges?
- How might any future program improve participation by operations that have historically faced barriers in accessing or utilizing the program?
- How might promotion and coordination of a program like SWEEP be improved with irrigation districts, groundwater sustainability agencies (GSAs), United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) and other potential partners?

This report presents the process and outcomes from the deliberations of the AAG which met three times in early 2021. With forty-one (41) members, including farmers and ranchers, University of California extensionists, irrigation industry representatives and vendors, technical assistance providers, water agency representatives, and advocates, the AAG generated forty-eight (48) recommendations aimed at strengthening SWEEP. Recommendations were developed through a facilitated collaborative process that was conducted remotely due to the inability to meet in-person during the Covid-19 pandemic. The AAG meetings were publicly noticed and were held in compliance with open meeting laws and CDFA public participation procedures.

Many of the AAG's recommendations seek to address commonly experienced challenges for SWEEP applicants and awardees; ensuring that SWEEP is accessible to a wider audience (socio-economically, demographically, and geographically) and facilitating strategic partnerships. Each AAG member was asked to indicate their level

of support for each recommendation and to provide written statements of opposition to any of the recommendations with which they had concerns.

Background

History of the State Water Efficiency and Enhancement Program (SWEEP)

The EFA of 1995 established a Scientific Advisory Panel (SAP) on Environmental Farming at the California Department of Food and Agriculture (CDFA). The act also established an environmental farming program within CDFA to provide incentives to farmers whose practices promote the well-being of ecosystems, air quality, and wildlife and their habitat. The authority granted by the EFA set the foundation for the development of CDFA's Climate Smart Agriculture incentive programs; programs that are focused on reducing the climate impact of the agriculture industry while also supporting farmers and ranchers in adoption of practices that support resilience to climate impacts.

In March 2014, in the midst of severe drought, then Governor Brown signed Emergency Drought Legislation which provided CDFA with $10 million dollars from the Greenhouse Gas Reduction Fund (GGRF)[1], the proceeds of California's Greenhouse Gas Cap and Trade program, "…to provide financial incentives to agricultural operations to invest in water irrigation treatment and distribution systems that will reduce GHG emissions, and will also reduce water and energy use, augment supply, and increase water and energy efficiency in agricultural applications". CDFA was directed to work with the Department of Water Resources (DWR) and the State Water Resources Control Board (SWRCB) to develop an incentive program. Using these funds and the defined legislative objectives, CDFA initiated the State Water Efficiency and Enhancement Program (SWEEP) to provide financial incentives to agricultural operations to implement irrigation projects that result in water savings and GHG emission reductions.

SWEEP is a competitive grant program open to California farmers, ranchers and recognized Native American Indian tribes. To date, SWEEP has been appropriated $87.5 million dollars; $67.5 M from GGRF and $20 M from the Parks and Water Bond Act of 2018 (Proposition 68). Table 1 lists historical appropriations to SWEEP.

Table 1: Historical SWEEP Funding Appropriations

Budget Year	Appropriation (Millions)	Funding Source
2013-2014	$10	GGRF
2015-2016	$10	GGRF
2016-2017	$40	GGRF
2017-2018	$7.5	GGRF
2018-2019	$20	Proposition 68 (Bond)

Objectives of the State Water Efficiency and Enhancement Program

SWEEP was developed with the intent of reducing both water use and GHG emissions associated with on-farm irrigation and pumping. CDFA worked with the California Air

[1] The suite of programs funded through the GGRF is collectively called California Climate Investments (CCI).

Resources Board (CARB) and the USDA NRCS to design quantification methodologies that can estimate the projected water and GHG savings that would result from the implementation of specific irrigation related technologies and practices. Examples of funded technologies include irrigation water management systems to be used for irrigation scheduling, the installation of micro-irrigation systems, pumping system upgrades, fuel conversions, and the inclusion of variable frequency drives (among other technologies and components of irrigation systems).

Application Procedures and Requirements

California farmers and ranchers can apply for SWEEP funding through an online application portal that is linked to the CDFA SWEEP webpage. Information entered into an application includes farm name, acreage of proposed project, project description, projected water savings and estimated GHG emission reductions, among other things. All applicants include the following attachments: a completed SWEEP Irrigation Water Savings Calculator, a completed SWEEP GHG Calculator, a completed SWEEP Budget Worksheet, and a completed project design for the proposed project.

CDFA conducts a series of technical workshops throughout the state during each application cycle. Scientific and administrative staff conduct workshops in northern, central, and southern California in order ensure regional distribution of the workshops. At least one of the technical workshops is recorded and posted online as an additional resource for applicants. To facilitate a competitive application process, SWEEP technical staff answer questions related to the SWEEP application through several Question and Answer posting, to deliver the information to all potential applicants.

To increase access to the program, CDFA awards technical assistance grants to third-party technical assistance providers throughout the state. These Technical Assistance Providers support interested parties apply for the SWEEP program by assisting with project applications, project designs, project budgets, water and GHG quantification tools and other needed resources during the application period. Third party technical assistance is free to any potential SWEEP applicant.

The SWEEP has been oversubscribed with an average over subscription rate of 280% (Figure 1).

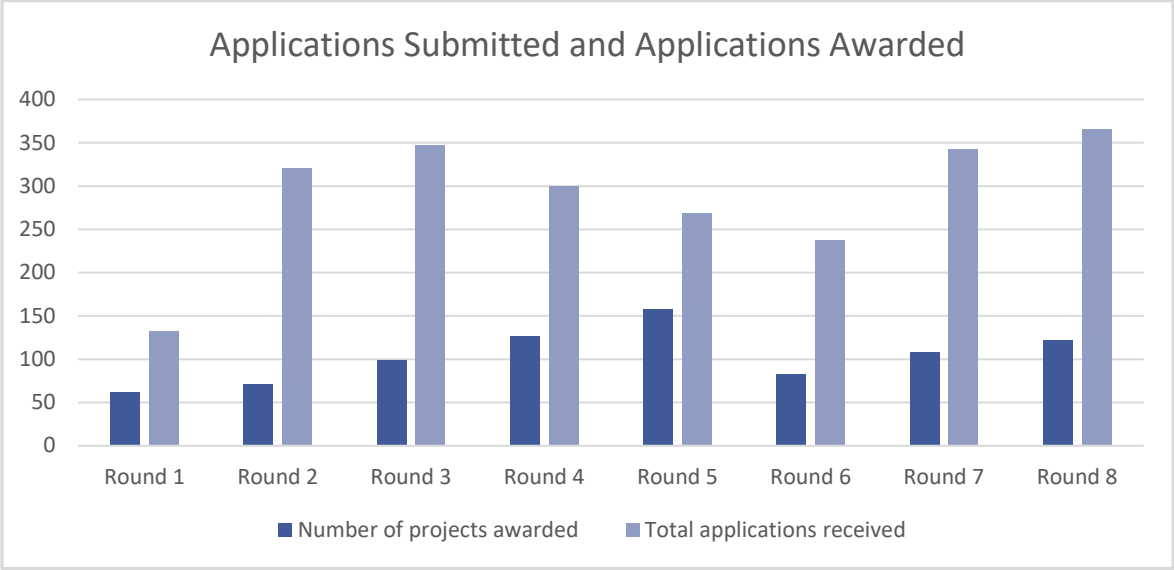

Figure 1: Breakdown of the applications that applied and the applications that were awarded over 8 funding rounds of SWEEP. All funding rounds have been over-subscribed.

Priorities

SWEEP requires that each implemented project result in both water savings and GHG emission reductions. Depending upon the funding source, CDFA integrates other priorities to meet funding-specific targets and goals. For example, when funded through the GGRF, SWEEP aims to support projects that benefit Priority Populations. SWEEP has also been funded through Proposition 68. From that appropriation, CDFA prioritized projects that provided benefit to Severely Disadvantaged Communities (SDACs), communities with a median household income less than $42,737. SDACs can be identified using an interactive map, Community Fact Finder.

To align with the requirements and values of the Farmer Equity Act of 2017, in 2018 CDFA began to prioritize funding to individuals who self-identify as Socially Disadvantaged Farmers and Ranchers (SDFRs). A SDFR is defined by the Farmer Equity Act as a farmer or rancher belonging to a socially disadvantaged group. A socially disadvantaged group means belonging to "…a 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". The following are identified as socially disadvantaged groups: African Americans; Native Indians; Alaskan Natives; Hispanics; Asian Americans; and Native Hawaiians and Pacific Islanders. The 2020 Report to the California Legislature on the Farmer Equity Act highlights CDFAs efforts to address challenges facing SDFRs in the California agricultural sector.

Project Implementation

All applications go through an administrative review to assess completeness and eligibility and a technical review to evaluate merit and feasibility, budget, and the projected water and GHG savings associated with the proposed project, among other factors. Projects that are selected for an award undergo a pre-project consultation in which the awardee and a SWEEP scientific staff member discuss project requirements and confirm project details before the execution of the grant agreement.

SWEEP is a reimbursement grant program and awarded projects are required to submit quarterly invoices to CDFA. All invoices must align with the proposed project description, design and submitted budget. Grant awardees are eligible for a 25 percent advanced payment of the total award amount. Ten percent of project funds are withheld from the final invoice payment until the project is verified by CDFA as complete through a verification visit or interview.

CDFA technical staff verify that projects are fully installed and operational and on the correct assessor's parcel number (APN) prior to releasing the last 10 percent of funds. During the verification, CDFA technical staff will meet with the grant awardee and supply the awardee with the "Summary of Continued Expectations" document that informs the awardee that projects are expected to be operational for 10 years and that, upon request, the awardee must supply CDFA technical staff with on-farm water and energy records up to 3 calendar years after the project has been installed. A random sample of completed projects are selected for post project reporting. During this process, past awardees supply CDFA with water and energy records associated with the project location. CDFA uses these records to evaluate project outcomes.

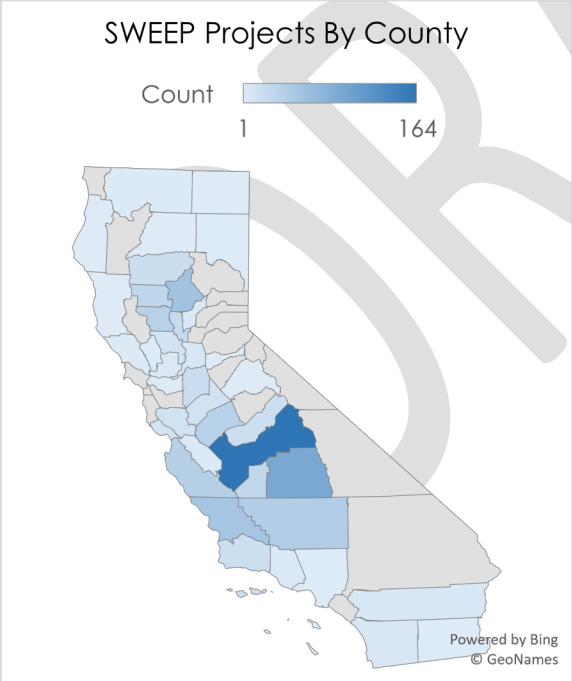

Figure 2: Distribution of SWEEP projects by county. Fresno County, in the darkest blue, has the largest number of funded projects. Counties in gray have not had any awarded projects.

Summary of SWEEP Outcomes to Date

Since 2014 SWEEP has awarded over 800 projects throughout the state of California which cumulatively cover over 137,000 acres of agricultural land. $81.1 million has been awarded with more than $52.8 million in matching funds contributed by awardees. These projects have an estimated GHG reduction of over 81,000 metric tons of CO_2 equivalent annually and an annual projected water savings of 117,000 acre-feet. Projects are widely distributed thorough the state with the largest concentration being in the Central Valley. A map of total SWEEP project by county is presented in Figure 2.

Grants are awarded to many different farm sizes. From the 2018-2019 appropriation of funding, the smallest farm awarded was 1.8 acres and the largest farm awarded was 23,000 acres. The median farm size over these two rounds is 60 acres. The average farm size in the state of California is 350 acres in 2018 according to the California Agricultural Statistics Review for 2018-2019. A breakdown of farm size can be seen in Figure 3.

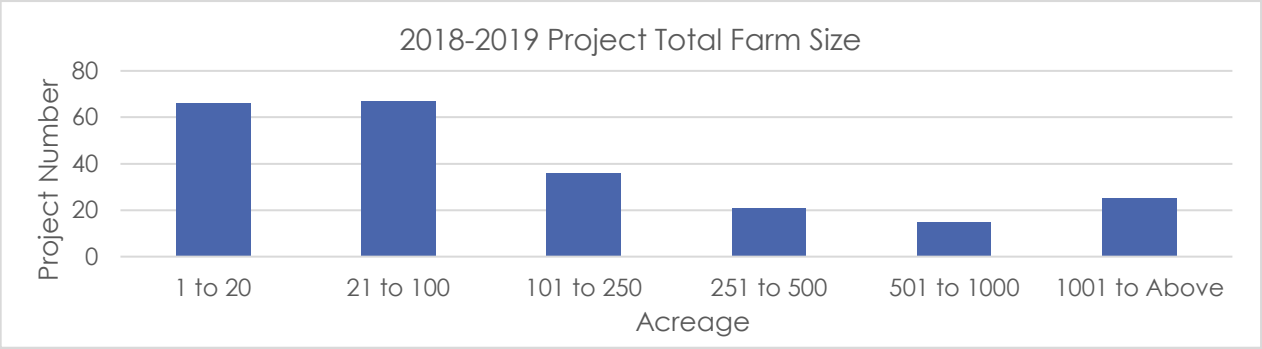

Figure 3: Breakdown of projects by total farm size of the agricultural operation. Of the 230 projects awarded through the latest appropriation of funds, 58% were awarded to farms that indicated they farmed 100 acres or fewer.

Projects utilized different practices or technologies to achieve quantifiable water and GHG savings. Many of the awarded projects utilize more than one practice to achieve these savings. Table 2 outlines common project components. Generally, projects combine multiple strategies to implement holistic irrigation improvement. Flow meters fall into the irrigation water management category and all projects are required to have a water measuring flow meter installed once the project is complete. This contributes to the high percentage of projects that include Irrigation Water Management; 97% of projects incorporated some technology that provides irrigation scheduling information such as flow meters, soil moisture sensors and evapotranspiration stations. Following irrigation water management strategies, improving the energy efficiency of irrigation pumps is a popular GHG reduction strategy, with 65% of awardees installing more efficient pumps or retrofitting existing pumps.

Table 2: SWEEP project practices implemented by awarded 2018-2019 projects.

SWEEP Practice	Number of Projects (Total 231 Projects)	Percent of Projects
Irrigation Water Management	225	97%
Conversion to Drip/Micro Irrigation	109	47%
Pump Fuel Conversion	106	46%
Improved Energy Efficiency	139	65%
Convert to Lower Pressure Irrigation	37	15%
Install a Variable Frequency Drive	134	58%

Most SWEEP projects utilize ground water as their sole source of irrigation water. Some projects used a mixture of surface water and ground water and the fewest projects rely solely on surface water. Water sources as a percentage of awarded projects for the 2018-2019 rounds can be seen in Figure 4.

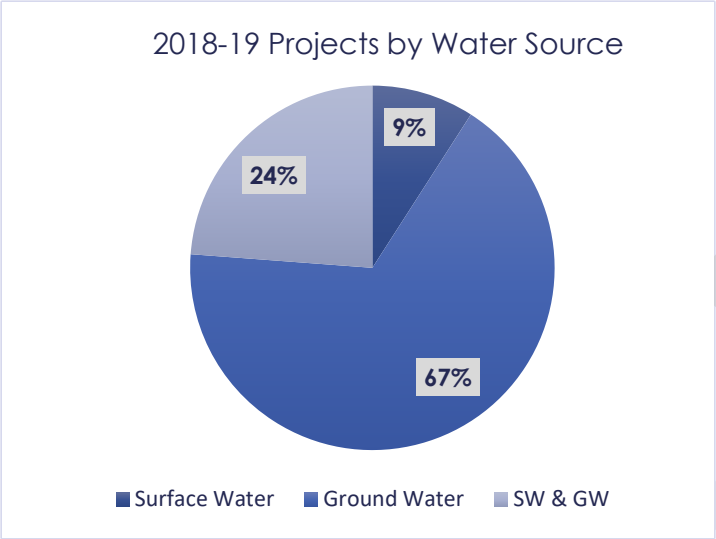

Figure 4: Breakdown of projects by irrigation water source.

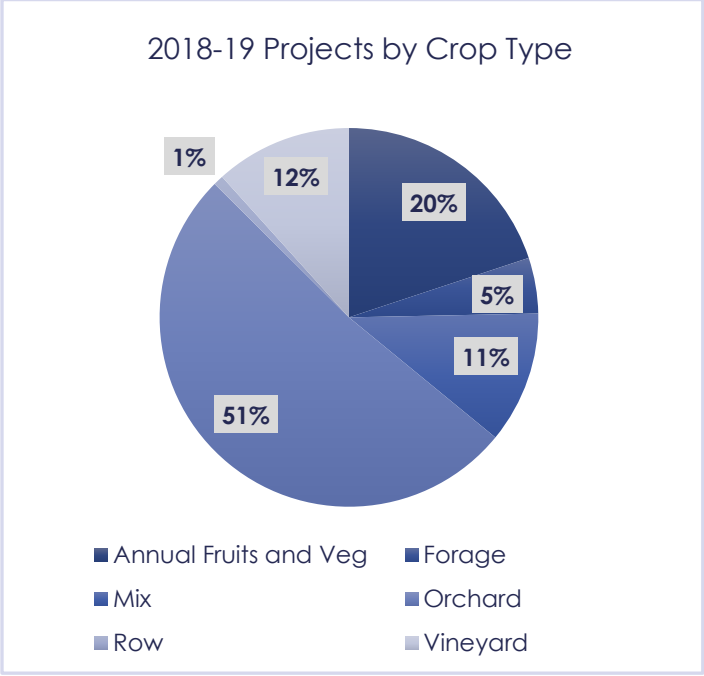

Figure 5: Breakdown of projects by the crop category. This figure indicates the crop that will be in place after project implementation.

SWEEP sees a broad range of crop types that receive awards. Orchard crops receive the highest percentage of awards with annual fruits and vegetables being second. The distribution of crop types being selected for awards generally reflect a similar distribution of crop types that applied for an award, indicating that crop type has little to no impact on the selection process. Program requirements might impact which types of agricultural operations end up applying for a SWEEP grant in general (Figure 5).

The 2018-2019 projects that were selected for an award based off funding priorities is presented in Figure 6. Proposition 68 funding required CDFA to expend 25 percent of the funds to benefit SDACs. Additional funding priorities were given to SDFRs. Some of the awarded projects identified as being both SDAC and SDFR projects. 15 percent of the awarded projects identified and neither SDAC nor SDFR.

The SWEEP program did not receive an appropriation in budget years 2019-20 nor 2020-21. CDFA technical and administrative staff are currently working with 2018-2019 awardees on

the implementation of the projects. Furthermore, CDFA scientific staff is continuing to work on 2016 and 2017 outcome reporting from selected projects.

Ongoing Engagement

When SWEEP was initiated in 2014 it was the first program of its kind to be administered by CDFA, providing direct incentives to farmers for implementation of technologies and practices that provides environmental benefit. The program is also the first to connect GHG reductions to irrigation system improvements in California. SWEEP has been over-subscribed by almost 300% and garners significant attention from the public, agricultural organizations, and other stakeholders. CDFA reports SWEEP outcomes at public meetings of the EFA SAP several times each year and has updated the program regularly in response to public input and guidance from the Panel. This ongoing engagement with the agricultural community has been fruitful for SWEEP, leading to a number of important program improvements including improved quantification tools, updates to application procedures, and incorporation of technical assistance and irrigation training.

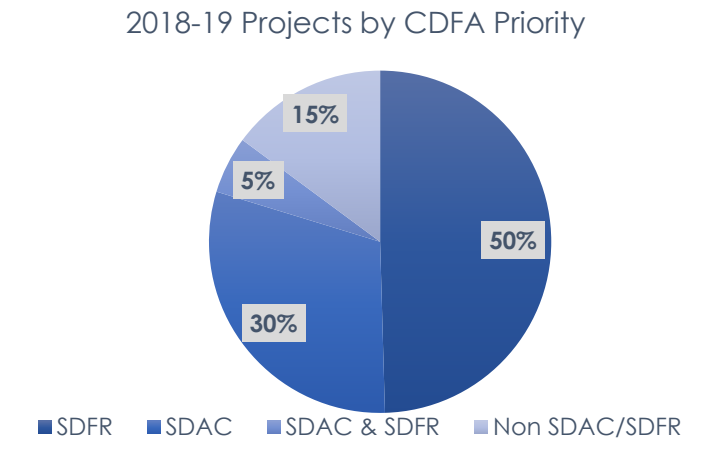

Figure 6: Breakdown of awarded projects by CDFA priority categories. Fifty percent of projects were awarded to farmers who identified as belonging to a socially disadvantaged group. Thirty percent of project were awarded to benefit SDACs.

Formation of Ad Hoc Advisory Group

In May 2020, a group of stakeholders requested the formation of an Advisory Group to inform future SWEEP guidelines and framework. The stakeholders' letter (Appendix A) mentioned rapidly improving technologies and the shifting regulatory environment, including the Sustainable Groundwater Management Act (SGMA), the Irrigated Lands Regulatory Program (ILRP), the Bay-Delta Plan, and the Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) Plan as important considerations. With the benefit of six years of implementation experience, the letter proposed to gather expert and stakeholder recommendations on possible updates and adjustments to SWEEP. Specifically, the letter called for the advisory group to examine and make recommendations around three topics:

1. Regarding SWEEP's ability to help farmers improve water use efficiency, what is working well? What might SWEEP seek to improve? How might SWEEP evolve to help farmers address new resource management challenges?
2. How might SWEEP improve participation by agricultural operations that have historically faced barriers in accessing or utilizing the program?
3. How might promotion and coordination of SWEEP be improved with irrigation districts, GSAs, and the USDA's NRCS and other potential partners?

CDFA announced the formation of an AAG through a press release in September of 2020. Over forty individuals responded to the announcement, applying to become a member of the group by submitting their resumes. The SAP recommended to the Secretary in October 2020 to form the AAG and to admit all the candidates into the group. The members include farmers and ranchers, University of California Agricultural and Natural Resources Cooperative Extensionists, irrigation industry representatives and vendors, technical assistance providers, water agency representatives and agricultural advocates. Figure 7 provides illustration of how members of the group identified their representation; members were able to select one or more options. A complete roster of the AAG is included as Appendix B.

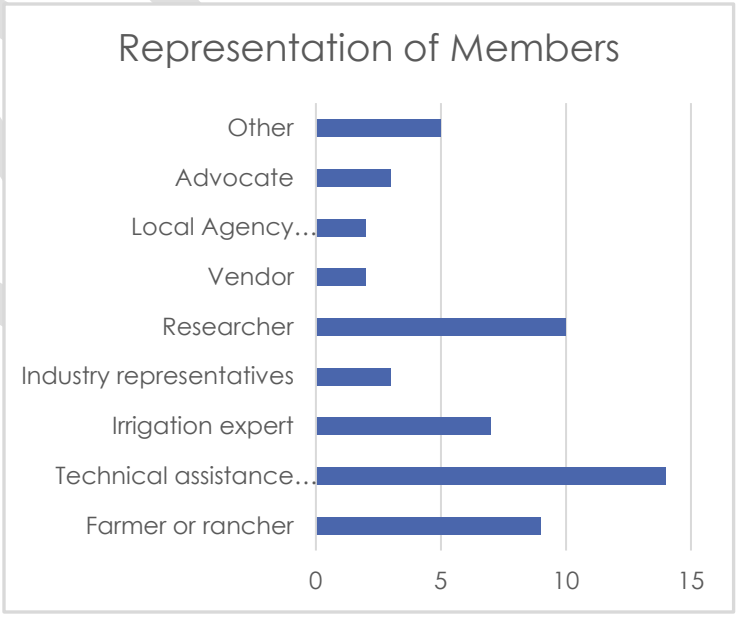

Figure 7: Identification categories of AAG members. Members of the AAG selected one or more descriptors to indicate the stakeholder group that they represented. Members that selected "Other" identified as government representatives, consultant/developer, a third-party implementer for utility agriculture efficiency program, a retired municipal water district director, and as launching disruptive technology for cities to control their water systems.

Process for Developing Recommendations

CDFA held three meetings of the AAG from January through March of 2021. The meetings were organized and led by professional facilitators with the Consensus and Collaboration Program (CCP), of the College of Continuing Education, at California State University in Sacramento. The three-meeting series was conducted virtually, through a remote meeting software platform and open to the public.

The members of the AAG contributed considerable time and effort to developing the recommendations outlined in this report. The first meeting was a half day meeting, while the second and third were all day meetings. Of the 41 members, 37 attended the first meeting, 33 the second, and 29 the third.

Recommendations were developed through a collaborative process. Prior to the first meeting, an opening survey was distributed to the members to seek their initial responses to the three general questions which provided an understanding into the scope of the group. The survey asked members to submit any data requests so that SWEEP staff could prepare information for the first meeting. The members also reviewed a draft charter for the group, that defined the scope of group's recommendations and set forth the process for decision-making and participation. The AAG Charter is attached as Appendix C.

At the first meeting on January 28, the AAG approved the final charter and CDFA staff presented information about SWEEP, its framework, application guidelines and requirements for awardees. Guiding legislation and priorities were reviewed by the AAG. CDFA also presented information on program outcomes from the latest funding appropriation and the initial feedback from the pre-meeting survey. Following the presentation, the AAG members were split into three break-out meeting rooms, targeted to each of the three focus areas. All members, however, rotated through the various break-out sessions, discussing the questions, survey responses and providing new ideas. Following meeting one, the facilitators and staff worked to organize the notes of the discussion around themes. Several high-level themes emerged, including the need to streamline applications, easing language barriers, dividing the program into categories to address diverse grower needs, increasing access to technical assistance, and developing programmatic goals.

At the second meeting on February 25, 2021, CDFA staff provided additional data which was requested by the AAG. Breakout sessions were utilized again to formulate draft recommendations around each of the three questions and the major themes that emerged at the first meeting. Group members could select the breakout sessions that they joined. This allowed each member to focus their attention to the topic or topics where they had the most expertise or interest. Following the break-out sessions, the draft recommendations were consolidated and discussed in a general gathering of the AAG.

At the close of the second meeting, members used a voting exercise to indicate their prioritization of the draft recommendations for further discussion. Each member was

given a limited number of votes to be distributed among the draft recommendations in any way that they chose. This prioritization exercise helped the facilitation team to plan for meeting three and to identify the areas of highest consensus.

Before the final meeting, volunteer AAG members developed critical observations and questions around the most highly prioritized draft recommendations to guide further refinement of these recommendations. The intent of developing these questions and comments was to help the group to make the final recommendations clear, specific, and actionable.

On March 25, 2021 the group met for the final time. The recommendations were refined, again with three break-out sessions targeted to each question, where members could participate in any session that they wished. Those recommendations were then harmonized in a general session at the end of the day. In a few cases, alternate versions of recommendations were kept because agreement could not be reached by members with different perspectives.

Finally, a web-based survey allowed members to indicate their degree of support, or opposition, to each of 48 recommendations. The full set of recommendations included those which had a more limited discussion during Meeting 3 but had been developed at Meeting 2. Those who registered opposition to a recommendation were given the opportunity to supply reasons. AAG members had two weeks to consider the recommendations and respond to the survey. Table 3 below illustrates the process that the AAG used to develop recommendations and evaluate consensus.

Table 3: Timeline of Advisory Group

Meeting Objective	Date
Meeting 1 – Information Delivery/Exchange	January 28, 2021
Meeting 2 – Recommendations Formed and Prioritized	February 25, 2021
Meeting 3 – Recommendations Finalized	March 25, 2021
Members Vote to Show Degree of Support	Through April 9, 2021

Recommendations

During breakout sessions, there was significant overlap in the discussion across the three focus questions. Some topics came up in more than one breakout session. However, high-level themes did emerge related to the three focus questions. In this section of the report, the recommendations are organized first by the focus question that they address and secondly under a theme. Generally, the themes that emerged for the AAG discussion were around identifying solutions to commonly experienced challenges for SWEEP applicants and awardees, ensuring that SWEEP is accessible and facilitating strategic partnerships.

Question 1: What might SWEEP seek to improve and how might SWEEP evolve to help farmers address new resource management challenges?

For each theme that emerged during the three meetings, the recommendations that received the highest level of support are discussed here in detail. The full list of recommendations to address Question 1 is included in Table 4. Members of the AAG who opposed recommendations were given the opportunity to provide an opposition statement. Opposition statements are summarized in Appendix D.

Question 1 was the broadest of the questions and in some cases served as a catch all for recommendations that did not align with the other two questions. Many regions of California are dealing with an uncertain future as it relates to water supplies. With the implementation of SGMA and other new and existing realities that might limit the states future water supply, members of the AAG were interested in discussing how SWEEP might improve to accommodate for new resource management challenges.

The discussion around the broad question about what might SWEEP seek to improve fell into multiple themes, four of which are highlighted here: Technology Support for Applicants and Awardees, Technology-Specific Requirements and Restrictions, Quantification of Project Benefits, and Program Buckets. The recommendation with greatest support under each theme is presented here in more detail, with all recommendations listed in Table 4 by theme and level of support.

Technology Support for Applicants and Awardees

Recommendation: CDFA should develop and maintain a roster of manufacturers and vendors who are willing to provide cost quotes for small farm/ranch operations.

This recommendation was put forward as it was identified by some AAG members that some farmers/ranchers have stated that they have found it difficult to secure price quotes from vendors for small installations. Due to a lack of knowledge of which vendors exist, more "lists of providers by expertise" could be very helpful. Farm Bureaus do already keep some such lists so the precedent has already been set and SWEEP could include a list of all vendors that have been used in previous SWEEP projects. During the refining discussion in meeting three it was brought up that there should be some system of removing problem vendors however there was some pushback that removing vendors that do not meet expectation as problematic as it requires CDFA to make a value judgement. In the discussion by the full AAG it was agreed that it would be better

to amend the recommendation to have CDFA provide a list of regional vendors who have provided assistance in the past with the additional suggestion to add farmer/rancher reviews or links to reviews of vendors in the regional vendors list. Some members of the AAG indicated that developing a roster is too time consuming and expensive to manage and maintain.

Technology-Specific Requirements and Restrictions

Recommendation: CDFA should allow for moveable technologies. Some water saving technologies can move with rotating growers (movable pump, portable soil moisture, etc.). CDFA should allow for technologies to move APNs. This would need to be determined to be acceptable by technical reviewers and included in the application.

California is a large and diverse state and there are regional differences that result in different irrigation methods being most utilized. Examples such as areas that have higher surface water availability can result in the increased use of mobile pumping stations that are often used on more than one field over the growing season. Furthermore, the realized benefit from some irrigation water management technologies are limited by current program requirements which exclude the movement of project funded technologies outside of the project zone. AAG members wished to see a pathway developed to add new methods into SWEEP's quantification methodologies. Some members indicated that movable equipment can be misused and taken advantage of and that permanent equipment is the best way for taxpayer funds to have verifiable realized benefits.

Quantification of Project Benefits

Recommendation: CDFA should encourage innovative approaches by updating the application and GHG/water savings tool to allow for growers to insert their own project types. Specifically, CDFA should allow for an "Other" section in the GHG and water savings tools so growers can add their own projects and explain how they came to the savings they insert. CDFA should clarify in the application that other practices, besides the short list of common practices (drip irrigation, pump conversion, etc.), are allowed and encouraged. Fertilizer application type could be in the other category that is developed. This would require an update to the Quantification Tool to include an "other" selection.

Some members of the AAG wished to allow for applicants to submit legitimate scientific literature/reports to support the proposed projects ability to reduce GHG and/or conserve water. Some members indicated that farmers may identify unique ways to save water that are not included in the water or GHG calculators. Further discussion was on allowing for reservoirs to be considered as a recharge basin. Some of the AAG members through that this could lead to speculation and the inclusion of unproven technologies.

Program Buckets

Recommendation: CDFA should divide funding into two categories: "Water-focused" or "Water- and GHG-focused" potentially setting aside specific funding amount for each category of project.

This recommendation is related to a theme that emerged to address increasing participation from growers who have had not yet been able to participate. By splitting the program into two funding categories (one category that only requires water savings), members of the AAG felt that surface water users would have greater access to the program. Additionally, there was discussion on the AAG that by requiring both water and GHG reductions for every SWEEP project, at times growers include components that they do not need in their SWEEP proposal. This recommendation seeks to reduce that problem.

Table 4: Summary of Recommendations to Address Question 1 by Theme and Level of Support[2]

Recommendation	Strong Support	Moderate Support	Weak Support	Neutral/ Don't Know	Opposed
Technology Support for Applicants and Awardees					
CDFA should develop and maintain a roster of manufacturers and vendors who are willing to provide cost quotes for small farm/ranch operations.	43.6%	30.8%	7.7%	10.3%	7.7%
CDFA should post a list of regional vendors on the website based off vendors that wish to be included on this list. CDFA should send out emails or web postings to have vendors signed up to be on this list. CDFA should use the list that CDFA already has, based off past applications, as a steppingstone for creating this list. CDFA should allow for growers to provide "reviews" on this list.	35.9%	30.8%	15.4%	12.8%	5.1%

[2] The recommendations were organized using this formula to determine the AAG's overall support: ((2*strong support + moderate support) -(2*opposition))

Recommendation	Strong Support	Moderate Support	Weak Support	Neutral/ Don't Know	Opposed
CDFA should develop a "Technical Service Provider list" to assure suppliers have experience and stable support for the irrigation water management (IWM) products for the length of term. Have vendors and technology associated with IWM vetted. A committee should be formed to determine further development of this providers list.	30.8%	35.9%	12.8%	10.3%	10.3%
CDFA should coordinate more broadly on efficient pump designs and standards.	15.4%	41.0%	20.5%	20.5%	2.6%
CDFA should create pathway for innovative technology inclusion. CDFA should find a way to allow for new innovative technology to be allowable within SWEEP. There should be a clear pathway for new, innovative technologies or practices to be included in SWEEP.	28.2%	33.3%	5.1%	20.5%	12.8%
Technology-Specific Requirements and Restrictions					
CDFA should allow for move-able technologies. Some water saving technologies can move with rotating growers (movable pump, portable soil moisture, etc.). CDFA should allow for technologies to move APNs. This would need to be determined to be acceptable by technical reviewers and included in the application.	46.2%	25.6%	15.4%	7.7%	5.1%

Recommendation	Strong Support	Moderate Support	Weak Support	Neutral/ Don't Know	Opposed
CDFA should allow Irrigation Water Management (IWM) systems to have 3 years of funding for the annual subscription. CDFA should reduce the life of the project for IWM from 10 to 3. The AAG would like to require CDFA to verify that the IWM application platform is operating during the time of verification. The AAG would like to require CDFA to verify prolonged operation during the 3-year term. CDFA should account for this change in the water/GHG calculations.	41.0%	25.6%	15.4%	15.4%	2.6%
CDFA should identify return on investment points for solar within SWEEP, potentially leveraging fallowed lands.	33.3%	25.6%	12.8%	25.6%	2.6%
CDFA should require a justification from applicants that apply for on-farm weather stations as to why CIMIS information is not sufficient.	30.8%	25.6%	12.8%	10.3%	20.5%
CDFA should cap the amount of funding per project for weather stations.	28.2%	25.6%	12.8%	25.6%	7.7%
Quantification of Program Benefits					

Recommendation	Strong Support	Moderate Support	Weak Support	Neutral/ Don't Know	Opposed
CDFA should encourage innovative approaches by updating the application and GHG/water savings tool to allow for growers to insert their own project types. Specifically, CDFA should allow for an "Other" section in the GHG and water savings tools so growers can add their own projects and explain how they came to the savings they insert. CDFA should clarify in the application that other practices, besides the short list of common practices (drip irrigation, pump conversion, etc.), are allowed and encouraged. Fertilizer application type could be in the other category that is developed. This would require an update to the Quantification Tool to include an "other" selection.	46.2%	33.3%	2.6%	15.4%	2.6%
CDFA should develop statewide or regional database to represent GHG use associated with specific crops types. This would allow growers to not need to have on farm data records when they wish to apply and would allow for them to apply without records based on the statewide or regional average.	38.5%	33.3%	7.7%	20.5%	0.0%

Recommendation	Strong Support	Moderate Support	Weak Support	Neutral/ Don't Know	Opposed
CDFA should encourage innovative approaches by updating the application and GHG/water savings output to allow for growers to insert additional "alternative technologies and practices." CDFA should allow for the Technical Reviewer (TR) to approve "alternative technologies and practices." CDFA should allow applicants to provide additional documentation to support the GHG and water saving of the project. Examples such as fertigation, weed control. CDFA should exclude non-vetted technology and practices. CDFA should stick with the water and GHG calculators and give it an additional consideration point if the TR approves. CDFA should cap the amount of points attributed to the GHG/ water offset to 5% for all "alternative technologies and practices" that are approved by the Technical Reviewer.	33.3%	30.8%	12.8%	18.0%	5.1%

Recommendation	Strong Support	Moderate Support	Weak Support	Neutral/ Don't Know	Opposed
CDFA should develop a "Whole Farm" criteria which includes actions to reduce carbon on an operational basis. e.g., conversion of diesel equipment to electric. CDFA should add a GHG benefit if charging is done with onsite solar and battery storage. This recommendation is for a consortium of farmers that might be able to save GHG on a larger level using things such as refrigeration, which is a large energy saver. Allowing for a consortium of farmers can result in a larger group savings of GHG. This would allow for packing houses, etc. to be included.	41.0%	23.1%	10.3%	12.8%	12.8%
CDFA should use water and energy "productivity" and not savings when calculating water and energy. CDFA should calculated based off the yield per unit of energy/water unit. CDFA should obtain water use data and yield records pre- and post- project. CDFA should incorporate this an either/or option so that farmers can demonstrate savings using either approach. CDFA should require the cost of that energy/water to be delivered in the application. This allows for a calculation of the cost associated with the savings.	18.0%	28.2%	18.0%	20.5%	15.4%
Program Buckets					

Recommendation	Strong Support	Moderate Support	Weak Support	Neutral/ Don't Know	Opposed
CDFA should divide funding into two categories: "Water-focused" or "Water- and GHG-focused" potentially setting aside specific funding amount for each category of project.	48.7%	33.3%	10.3%	5.1%	2.6%
Instead of only one maximum request for SWEEP, CDFA should define two cost category scales for SWEEP projects including (1) small cost projects ($50,000 maximum request with simplified application), (2) medium cost projects and large cost projects ($50,000-130,000 maximum request).The majority of funds would go to the medium bucket; however, the number of small projects and reach would far exceed that of larger projects.	53.9%	25.6%	12.8%	2.6%	5.1%
CDFA should divide funding into three program categories: GHG-first, Water-first, and Combined projects. Allow growers to apply for funds to cover "water-focused" or "GHG-focused" projects, potentially setting aside specific funding amount for each category of project.	43.6%	33.3%	7.7%	15.4%	0.0%

Question 2: How might SWEEP improve participation by agricultural operations that have historically faced barriers in accessing or utilizing the program?

For each theme that emerged during the three meetings, the recommendations that received the highest level of support are discussed here in detail. The full list of recommendations to address Question 2 is included in Table 5. Members of the AAG who opposed recommendations were given the opportunity to provide an opposition statement. Opposition statements are summarized in Appendix D.

Question 2 is focused on how SWEEP can reduce the barriers associated with both applying for and being awarded a SWEEP grant. California's agricultural sector has a

diverse group of constituents. Farms can vary in size and resource availability, agricultural locations can have differences in local resources, and many who work in the sector do not have English as their native language. Many additional barriers are faced when growers are trying to utilize SWEEP.

The discussion around what the program can do to reduce historically faced barriers resulted in multiple themes, five of which are highlighted here: Ease Language Barriers, Increase Opportunities for Surface Water Users, Availability of Technical Assistance, Additional Considerations for Prioritizing Applicants for Award, Streamline Application Process, and Distribution of Grant Funds. The recommendation with greatest support under each theme is presented here in more detail, with all recommendations listed in Table 5 by theme and level of support:

Ease Language Barriers

Recommendation: CDFA should provide outreach, educational materials and, to the degree possible, the application in multiple languages, prioritizing Spanish. Additionally, technical assistance in various languages should also be provided and prioritized.

Discussion among the AAG members indicated that there was high support for CDFA to ensure that the SWEEP program is accessible to non-English speaking farmers and ranchers. Several recommendations were developed that focus on outreach to non-English speakers and increasing technical assistance to non-English speakers. Spanish was identified as a priority for CDFA, but other languages were also mentioned as important farming communities to reach include those that speak Hmong, Punjabi, and Chinese.

Increase Opportunities for Surface Water Users

Recommendation: CDFA should allow for water supply to have the inclusion of a storage and compensation reservoir so that the farmer can capture the water on the intervals that water is delivered or diverted. CDFA should allow for the pressurization, filtration and the use of pressurized irrigation coming from the storage reservoir. This could result in optimization of water and energy usage. CDFA should allow for the utilization of GHG savings that was offset from one source as GHG credit that can be used for a new GHG producing source such as a new pump that is used to pressurize the storage reservoir.

This recommendation stems from the discussions among AAG membership to increase the ability of surface water users to be eligible and competitive in obtaining a SWEEP award. This recommendation received a high degree of support from the membership during the final voting exercise. None of the members indicated that they opposed this recommendation and 56.4% of the voting members indicated strong support, the most among all the recommendations under this question.

Availability of Technical Assistance

Recommendation: CDFA should develop clear criteria to identify farmer groups/consortiums, nonprofits, Resource Conservation Districts (RCDs), etc. to be permitted to administer and/or support small farm projects.

This type of program would make the most sense for a group of small-scale farmers that might have difficulty doing individual applications, but could apply as a group all doing similar projects and would have increased water and/or GHG savings as a group.

Additional Considerations for Prioritizing Applicants for Award

Recommendation: CDFA should give some priority to lower income brackets.

This recommendation was originally created during the discussion of program buckets, with lower income brackets potentially being a bucket along with small farmers, regions with higher agricultural employment, and over-drafted basins. These criteria were then separated into distinct recommendations to analyze their level of support of which this recommendation was one of the higher voted. The higher support for this recommendation comes from the consensus that SWEEP should focus its support on those in lower income brackets. Objections revolved around the fact that it could already be covered by the priority given to SDAC, SDFR, and small farms.

Streamline Application Process

Recommendation: CDFA should Increase the pre-application outreach period to six months and the application window to 90 days to accommodate farmers' harvest and work schedules. CDFA should hold the application period in early winter when most farmers are not in harvest or planting season, but ensure it is long enough so that technical assistance providers are not impacted during holiday season.

Increasing the application window would allow all outreach campaigns more time to gain traction resulting in an increased number of total applications. While a lower percentage of applicants would receive funds, the program would be able to target the funds to more applicants that fit the program's goals. Outreach should be 3-6 months before the application period begins. Most farmers are used to just keeping up with the immediate problems at hand and it may take several encounters with the information or ideas before one feels familiar enough to pursue a grant. Most farmers mull things over, ask peers and professionals questions, and seek opinions before jumping in. The AAG recommended not to make the application portion take place during summer and harvest unless it is a long application period. It is too busy a time of year for small farmers to do anything other than farm. They likely do not have the advantage of having a grant writer. An AAG member stated that it is important to note that if the application period is during winter, many irrigation districts do not have water available and pump tests in surface water systems might not be possible.

Distribution of Grant Funds

Recommendation: CDFA should allow farmers to apply for 25% advance payment more than once, so that they can request an additional payment after they have used up their first 25%.

Allowing multiple 25% advance payments would help small farmers. If a farm knew that they would not be able to utilize the program due to the current reimbursement policies, this recommendation would be a benefit to them and potentially increase participation.

Table 5: Summary of Recommendations to Address Question 2 by Theme and Level of Support

Recommendation	Strong Support	Moderate Support	Weak Support	Neutral / Don't Know	Opposed
Ease Language Barriers					
CDFA should provide outreach, educational materials and, to the degree possible, the application in multiple languages, prioritizing Spanish. Additionally, technical assistance in various languages should also be provided and prioritized.	59.0%	28.2%	5.1%	2.6%	5.1%
CDFA should improve resources (videos, translation) available to non-native English-language farmers and ranchers (Spanish, Hmong, Chinese, Punjabi).	46.2%	43.6%	5.1%	2.6%	2.6%
CDFA should require training opportunities to both potential applicants and to awardees in various languages from relevant experts on related topics, including, but not limited to, effectively using relevant new technologies, equipment, and practices.	41.0%	33.3%	7.7%	12.8%	5.1%

Recommendation	Strong Support	Moderate Support	Weak Support	Neutral / Don't Know	Opposed
CDFA should require training opportunities to both potential applicants and to awardees in various languages from relevant experts on related topics, including, but not limited to, effectively using relevant technologies, equipment (e.g., irrigation system maintenance) and practices (i.e., distribution uniformity, irrigation scheduling, etc.).	46.2%	20.5%	20.5%	7.7%	5.1%
Increase Opportunities for Surface Water Users					
CDFA should allow for farmers to apply for funding for a storage and compensation reservoir so that the farmer can capture the water on the intervals that water is delivered or diverted. CDFA should allow for the pressurization, filtration and the use of pressurized irrigation coming from the storage reservoir. This could result in optimization of water and energy usage. CDFA should allow for the utilization of GHG savings that was offset from one source as GHG credit that can be used for a new GHG producing source such as a new pump that is used to pressurize the storage reservoir.	56.4%	23.1%	5.1%	15.4%	0.0%

Recommendation	Strong Support	Moderate Support	Weak Support	Neutral / Don't Know	Opposed
CDFA should allow for individual farmers that are supplied pressurized water from an irrigation district a pathway to apply for the SWEEP program. CDFA should make sure that the farmers that are supplied with surface water delivery systems are allowed.	46.2%	33.3%	7.7%	12.8%	0.0%
Availability of Technical Assistance					
CDFA should develop clear criteria to identify farmer groups/consortiums, nonprofits, Resource Conservation Districts, etc. to be permitted to administer and/or support small farm projects.	35.9%	35.9%	15.4%	7.7%	5.1%
Additional Considerations for Prioritizing Farms for Award					
CDFA should give some priority to lower income brackets.	33.3%	43.6%	12.8%	7.7%	2.6%

Recommendation	Strong Support	Moderate Support	Weak Support	Neutral / Don't Know	Opposed
During the application process, CDFA should give priority to small farmers beyond SDACs and SDFRs based upon a statement of need and survey response. Survey questions could include the following: 1) Acreage farmed, 2) Income range of farmer, 3) Number of employees, 4) Percentage of employees that are family members, 5) Primary language other than English, 6) Production costs as a percentage of income, 7) Commodity grown, 8) Gross receipts (under $250k)	41.0%	35.9%	7.7%	7.7%	7.7%
CDFA should develop a three-tiered approach for funding projects. CDFA should add consideration in the evaluation of small agricultural operations. This could be a tiered approach of applications by the agricultural operations size (or grant request amount).	35.9%	23.1%	20.5%	18.0%	2.6%
CDFA should weigh the value of types of benefits with or against regional needs.	12.8%	41.0%	20.5%	20.5%	5.1%
CDFA should give some priority to regions with higher agricultural production.	15.4%	41.0%	20.5%	10.3%	12.8%
CDFA should give some priority to regions with higher agricultural employment.	7.7%	41.0%	23.1%	18.0%	10.3%

Recommendation	Strong Support	Moderate Support	Weak Support	Neutral / Don't Know	Opposed
CDFA should Increase the pre-application outreach period to six months and the application window to 90 days to accommodate farmers' harvest and work schedules. CDFA should hold the application period in early winter when most farmers are not in harvest or planting season, but ensure it is long enough so that technical assistance providers are not impacted during holiday season.	61.5%	30.8%	2.6%	5.1%	0.0%
Streamline Application Process					
Pump test and energy/water records should not be required to apply for SWEEP support but would be required to receive funding if the project is approved. SWEEP application to include pump efficiency estimate (based on pump age or expert judgement) with actual test completed if project is selected. For projects selected, allow applicants to submit pump test costs as a project expense. Also, allow other entities to cover the cost of the smaller pump tests (< 30 horsepower) for farmers who have submitted applications to SWEEP. Pump tests are encouraged, but not required at time of application submittal.	56.4%	18.0%	10.3%	10.3%	5.1%

Recommendation	Strong Support	Moderate Support	Weak Support	Neutral / Don't Know	Opposed
CDFA should use case studies in training materials and provide examples of successful applications.	43.6%	38.5%	7.7%	7.7%	2.6%
CDFA should simplify the application process for all applicants by only requiring relevant information. CDFA should consider removing requirements for 3 years control of land and historical records and removing questions that would be a barrier to applicants who do not want to expose sensitive information (e.g., crop yields, etc.).	30.8%	35.9%	20.5%	10.3%	2.6%
Distribution of Grant Funds					
CDFA should allow farmers to apply for 25% advance payment more than once, so that they can request an additional payment after they have used up their first 25%.	66.7%	15.4%	5.1%	10.3%	2.6%

Question 3: How might promotion and coordination of SWEEP be improved with irrigation districts, groundwater sustainability agencies, and the United States Department of Agriculture's Natural Resources Conservation Service and other potential partners?

For each theme that emerged during the three meetings, the recommendations that received the highest level of support are discussed here in detail. The full list of recommendations to address Question 3 is included in Table 6. Members of the AAG who opposed recommendations were given the opportunity to provide an opposition statement. Opposition statements are summarized in Appendix D.

Throughout California variability and uncertainty of irrigation water supply is a universal concern. With many regions of California grappling with uncertain water supplies, the AAG discussed how SWEEP program collaborate more closely with irrigation districts and GSAs since these groups have responsibility and knowledge of regional and local

water supply issues. Beyond the collaboration with regional water managers, the AAG discussed the important contributions that other partnerships could bring to the SWEEP program. The group wanted to see further coordination with USDA NRCS, Farm Bureaus, commodity groups and state agencies.

The discussion around promotion and coordination is organized below under four themes: SWEEPs Role in State-Level Strategy, Outreach Coordination, Considerations around SGMA and Collaborative Projects. The recommendation with greatest support under each theme is presented here in more detail, with all recommendations listed in Table 6 by theme and level of support:

SWEEP's Role in State Level Strategy

Recommendation: Through discussion with agency partners and Governor's office, CDFA should identify SWEEP's role in state-level planning around water resilience.

The AAG wanted to see SWEEP's role in state-level objectives more clearly defined. The group discussed whether CDFA should work with agency partners to develop programmatic goals for the program around water savings, GHG reductions and environmental benefits. Additionally, the group felt that SWEEP's role should be recognized in state-level planning around water resilience. The group indicated that formalizing SWEEPs role and establishing goals would be helpful because it would provide clarity for individuals who want to explore if the program is a good fit for them. It would also help organizations with similar goals and objectives to align with SWEEP.

Recommendation: CDFA should prioritize strategic outreach coordination in appropriate locations with Farm Bureaus and GSAs (because they are involved with all sizes of farms) and at trade shows and commodity groups.

When discussing opportunity for outreach coordination with partners throughout California, the AAG acknowledged that the high level of interest in SWEEP (measured by the number of applications received) indicated that there may not be a strong need to increase outreach, but the group did feel that CDFA could be more strategic with outreach moving forward. Farm Bureaus, GSAs and commodity groups were recognized for their consistent communication with growers of all farm sizes. Some of the AAG members expressed concern about having a third party overly involved with outreach and expressed that there are other groups that might be able to support this effort.

Considerations around the Sustainable Groundwater Management Act

Recommendation: CDFA should give some priority to critically (or approaching critically) over-drafted groundwater basins.

The SGMA was passed in 2014 and requires regional groundwater agencies to develop and implement plans to bring groundwater use to sustainable levels over the coming decades. Many of California's highly productive agricultural regions expect to be impacted by SGMA implementation, resulting in agricultural land coming out of production. Some members felt that CDFA should take extra precaution with

investment in regions where SGMA is likely to result in significant loss of farmed acreage. Suggestions were made that GSAs could be important partners by contributing to the review of applications or by submitting letters of support for SWEEP applications that fall within critically over-drafted basins. GSAs would have the knowledge of whether these investments would be long-lived and contribute to the sustainability of the basin.

On the other hand, the AAG members acknowledged the need for farmers and ranchers in critically over-drafted groundwater basins to receive support from the SWEEP program to reduce water used for irrigation. SWEEP grants in these regions can help support the region in achieving sustainable groundwater use. The opposition statement indicates that several members did not feel that prioritization of critically over-drafted groundwater basins would be appropriate for SWEEP.

Collaborative Projects

Recommendation: CDFA should allow for collaborative solar installations (with multiple farmers).

There was discussion among the AAG about allowing collaborative applications. This was mentioned in several contexts. Some members suggested that an organization such as an irrigation district could take the lead on a single application that includes multiple growers. This could help to facilitate regional goals for water and/or energy efficiency. Others talked about how some SWEEP-funded technologies, such as large renewable energy installations, may be more cost-effective if multiple growers could collaborate on one installation.

The opposing statements reflect that some members of the group feel that installation of collaborative solar arrays might divert too much funding away from the program and that perhaps growers do not need SWEEP incentives for solar installations since the solar array will provide economic return.

Table 6: Summary of Recommendations to Address Question 3 by Theme and Level of Support

Recommendation	Strong Support	Moderate Support	Weak Support	Neutral/ Don't know	Opposed
SWEEP's Role in State Level Strategy					
Through discussion with agency partners and Governor's office, CDFA should identify SWEEP's role in state-level planning around water resilience.	35.9%	35.9%	10.3%	15.4%	2.6%

Recommendation	Strong Support	Moderate Support	Weak Support	Neutral/ Don't know	Opposed
The EFA SAP should coordinate with GSAs, irrigation and water districts, and CARB to identify overall water conservation and GHG emissions reduction goals for SWEEP.	33.3%	38.5%	15.4%	10.3%	2.6%
Outreach Coordination					
CDFA should prioritize strategic outreach coordination in appropriate locations with Farm Bureaus and GSAs (because they are involved with all sizes of farms) and at trade shows and commodity groups.	46.2%	12.8%	10.3%	20.5%	10.3%
CDFA should target SWEEP outreach to certain groups of farmers with a common lack of solutions, keeping in mind that farmers may distrust the government and that there is a need to be sensitive in recruitment and respect traditional methods.	25.6%	28.2%	30.8%	12.8%	2.6%
As an outreach strategy, CDFA should work with organizations to identify farmers who are "ready."	15.4%	30.8%	23.1%	23.1%	7.7%
CDFA should coordinate with the Association of California Water Agencies.	18.0%	18.0%	28.2%	28.2%	7.7%
Considerations Around the Sustainable Groundwater Management Act					
CDFA should give some priority to critically (or approaching critically) over-drafted groundwater basins.	38.5%	25.6%	18.0%	12.8%	5.1%

Recommendation	Strong Support	Moderate Support	Weak Support	Neutral/ Don't know	Opposed
CDFA should coordinate with GSAs to avoid incentivizing projects on land that will be fallowed due to SGMA. GSAs should thoroughly investigate and review projects and provide letters of support if able. This would be most applicable to medium and large funding requests.	33.3%	35.9%	12.8%	10.3%	7.7%
CDFA should establish a technology committee or an innovation team that understands pump efficiency and water metering technology to benefit both GSAs and farmers.	25.6%	41.0%	20.5%	5.1%	7.7%
CDFA should evaluate projects on land to be fallowed due to SGMA. GSAs should evaluate projects and provide letters of support if in approval of project. Support letters would be advisable, but not mandatory to apply to SWEEP and applicable to medium and large cost projects. CDFA and the Science Panel should continue discussion with GSAs due to uncertainties in the future due to SGMA.	20.5%	25.6%	18.0%	25.6%	10.3%
Collaborative Projects					
CDFA should allow for collaborative solar installations (with multiple farmers).	46.2%	23.1%	7.7%	15.4%	7.7%

Recommendation	Strong Support	Moderate Support	Weak Support	Neutral/ Don't know	Opposed
CDFA should create an avenue for application by irrigation districts, incorporating groups of growers.	23.1%	30.8%	15.4%	15.4%	15.4%

Appendix A: Request to Form SWEEP Advisory Group

May 26, 2020

TO: Secretary Karen Ross and the Environmental Farming Act Science Advisory Panel

Re: **Request for the EFA SAP to Convene a SWEEP Stakeholder Advisory Group**

Dear Secretary Ross and the Science Advisory Panel Members:

Thank you for the important role you have played in guiding the development of the State Water Efficiency and Enhancement Program (SWEEP) over the past six years. Your expert input to the program has contributed greatly to the its success. Many farmers in our respective networks have benefitted from the program and are eager to see the program continue and expanded.

In light of new regulatory, technological, and policy developments, as well as stakeholder feedback, we, the undersigned, are requesting the Science Advisory Panel (SAP) convene a stakeholder advisory group to review and, if necessary, make recommendations for updates to the program. We are making this request now to give stakeholders and the SAP adequate time outside of SWEEP's typical quick-turnaround funding cycles to consider these developments and address the next phase of the program.

Farmers are facing a complex new regulatory environment, from implementation of the Sustainable Groundwater Management Act (SGMA) and the Irrigated Lands Regulatory Program (ILRP) to new requirements from the Bay-Delta Plan and the Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) Plan. These changes have made resource management more challenging and complicated, and require the need for both efficient and flexible on-farm water management systems. Concurrently, irrigation technologies are evolving rapidly, creating both exciting new opportunities and the need for more resources for some growers.[1]

For the first few years, SWEEP predominately received funding from the Greenhouse Gas Reduction Fund (GGRF), which required every project to demonstrate quantifiable on-farm greenhouse gas (GHG) reductions. This requirement led to the incentivization of micro and drip irrigation systems, and also had the consequence of complicating the implementation of on-farm water efficiency projects that use surface water, portable irrigation pumps, and pressurized water. The current funding source for the program (Proposition 68) and potential future funding sources for the program (e.g. potential bond funds or the General Fund) may not have the same GHG

[1] Management of Agricultural Energy and Water Use with Access to Improved Data. Fresno State Center for Irrigation Technology and Ag H2O. 2017.

requirements as GGRF. As such, this may allow for a greater diversity of projects to help farmers address on-farm water management challenges.

In light of these changes and new opportunities for SWEEP, we are requesting the SAP use its authority under Section 568(c) of the Food and Agriculture Code[2] to convene stakeholders to make recommendations to address the following:

1. The program's ability to help farmers improve water use efficiency – what's working well and what might the program seek to improve? How might the program evolve to help farmers address new resource management challenges?

2. How might the program improve participation by operations that have historically faced barriers in accessing or utilizing the program?

3. How might promotion and coordination of SWEEP be improved with irrigation districts, groundwater sustainability agencies, and USDA-NRCS?

The state's record-breaking drought that spurred the creation of SWEEP in 2014 has thankfully subsided, but as temperatures continue to rise, the risk of severe droughts is predicted to increase in California by 50 percent by 2100.[3] Climate scientists also predict the state will increasingly experience precipitation whiplash, going from severe droughts to greater flooding.[4] We have a wealth of expertise in the state that can be tapped to participate in discussions on SWEEP, including farmers, technical assistance providers, irrigation experts, and irrigation industry representatives familiar with the grant program. We believe a diverse stakeholder advisory group can provide valuable expertise and time to assist the SAP in updating SWEEP to better serve our state's farmers in these challenging times, and we believe the best time to convene such a group is now.

Thank you for considering our request.

Sincerely,

Brian Shobe
Associate Policy Director
CalCAN

Taylor Roschen
Policy Advocate
California Farm Bureau Federation

---

2 FAC 568(c) states: "The panel may establish ad hoc committees, which may include professionals, scientists, or representatives of nongovernmental entities, to assist it in performing its functions."

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

4 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.

Kris Beal
Executive Director
Vineyard Team

Nathan Harkleroad
Program Director
Agriculture & Land Based Training Association

Laurel Marcus
Executive Director
California Land Stewardship Institute

Rex Dufour
Western Regional Office Director
National Center for Appropriate Technology (NCAT)

Andy Fisher
Executive Director
Ecological Farming Association

Appendix B: Roster of Ad Hoc Advisory Group

NAME	AFFILIATION	TITLE
Khaled Bali	University of California	Irrigation Water Management Specialist
Mark Battany	University of California	Water Management and Biometeorology Advisor
Pat Biddy	Vanguard Ag	Senior Manager
Ellen Bruno	University of California	Assistant Cooperative Extension Specialist
Kiti Campbell	Westlands Water District	Supervisor of Resources
Nancy Comstock	Pumping Efficiency Testing Services (PETS)	Owner
Ruth Dahlquist-Willard	University of California	Small Farms and Specialty Crop Farm Advisor
Tom Devol	Almond Board of California	Senior Manager
Craig Elmore	Desert Sky Farms	Farmer
Dave Evans	Airometrix	Senior Engineer and Program Manager
Tom Evans	Municipal Water District	Director (retired)
Ben Faber	University of California	Soils/Water/Subtropical Horticulture Advisor
Jarrad Fisher	San Mateo Resource Conservation District	Program Manager
Steve Fukagawa	Steve Fukagawa Farms	Farmer
Miguel Garcia	Napa County Resource Conservation District	Sustainable Agriculture Project Manager
Christine Gemperle	Gemperle Orchards	Owner/Operator
Nathan Harkleroad	Agriculture and Land-Based Training Association (ALBA)	Program Director
Daniel Hartwig	Woolf Enterprises	Resource Manager
Dana Koppes	TRC	Field Engineer
Sarah Kurtz	University of California	Professor
Ronald Leimgruber	Ronald C Leimgruber Farms	Owner/Farmer
Lindsey Liebig	Sacramento County Farm Bureau	Executive Director
Sean McNamara	Sierra Orchards	Farm Manager
Josué Medellín-Azuara	University of California	Associate Professor
Daryn Miller		Vineyard Manager
Ali Montazar	University of California	Irrigation and Water Management Advisor
Pramod Pandey	University of California	Associate Specialist/AES Faculty
John Peairs	XiO	Sales/Marketing Consultant
Zack Peek	Atlas Consulting, LLC	Owner

NAME	AFFILIATION	TITLE
Valerie Perez	University of California	Community Education Specialist
Patricia Poire	Kern Groundwater Authority	Executive Director
Greg Rawlings	Jacobs Farm	Organic Farmer
Dave Runsten	Community Alliance with Family Farmers	Policy Director
Brian Shobe	CalCAN	Associate Policy Director
Chris Terrell	Wexus Technologies, Inc	CEO/Co-founder
Tannis Thorlakson	Driscoll's	Senior Manager
Daniele Zaccaria	University of California	Agricultural Water Management Specialist
Tiebiao Zhao	Xmotors.ai	LIDAR Software Engineer
Qi Zhou	University of California	Community Education Specialist
Judith Redmond	Full Belly Farm	Co-Owner
Greg Norris	USDA NRCS	State Conservation Engineer

Appendix C: Advisory Group Charter

California Department of Food and Agriculture

Environmental Farming Act Science Advisory Panel

Ad Hoc Advisory Group

Adopted Charter

Purpose

At the direction of the California Department of Food & Agriculture's Environmental Farming Act Science Advisory Panel (EFA SAP) and the implementation of the State Water Efficiency and Enhancement Program (SWEEP), an Ad Hoc Advisory Group (AAG) of the EFA SAP has been convened. The EFA SAP is authorized under Section 568(c) of the Food and Agriculture Code to establish ad hoc committees, which may include professionals, scientists, or representatives of nongovernmental entities, to assist it in performing its functions.

The purpose of this document is to provide a framework for participation, cooperation, communication, and decision-making by the AAG.

Objectives and Scope of Activities

The overall purpose of the AAG process is for the gathered stakeholders to review the history and accomplishments of SWEEP in order to prepare recommendations for potential updates and adjustments for any future program, including partnerships and alternative funding sources for incentives to growers and methods to align SWEEP with other agricultural water related efforts and conservation efforts around the State. More specifically, the AAG is being asked to develop recommendations on the following topics:

1. SWEEP's ability to help farmers improve water use efficiency. What is working well and what might SWEEP seek to improve? How might SWEEP evolve to help farmers address new resource management challenges?

2. How might SWEEP improve participation by agricultural operations that have historically faced barriers in accessing or utilizing the program?

3. How might promotion and coordination of SWEEP be improved with irrigation districts, GSAs, and the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS)?

Membership and Designation

Based on the nomination of the EFA SAP, the CDFA Secretary has appointed forty-three (43) individuals to the AAG. These stakeholders have diverse expertise in farming,

climate smart agricultural practices, California water regulations, agricultural water use efficiency and technologies (see Attachment 1 for list of the members and their affiliations). Unless renewed by appropriate action by the CDFA Secretary, the AAG will terminate upon acceptance of its recommendation report by the EFA SAP.

Members of the AAG shall not serve in the capacity of staff of CDFA, shall have no authority to negotiate or otherwise act on behalf of CDFA, and will not promote private or proprietary services during the AAG meetings.

Timeline and Public Participation

The AAG will meet three (3) times starting in early 2021 as follows:

- Meeting 1 (January 28) – Process Kick-Off & Information Sharing
    - Review and adoption of Charter.
    - CDFA staff presents on SWEEP framework, program development, and funding source requirements.
    - Group discussion and initial review of preliminary thoughts and ideas related to the framing questions presented to the AAG.
    - Identification of any needed data and questions to be answered by CDFA staff to inform process.
- Meeting 2 (February 25) - Recommendations Formed
    - In-depth review of information requested at end of previous meeting.
    - Development of preliminary recommendations.
    - Identification of any needed data and questions to be answered by CDFA staff to help refine recommendations.
- Meeting 3 (March 25) - Recommendations Finalized
    - Review and refinement of recommendations.
    - Level of consensus for recommendations determined and, if necessary, dissenting opinions articulated.
    - Prioritization of recommendations (e.g., which recommendations will, if implemented, have the most significant positive impact)
    - Adoption of AAG Final Recommendations Report.

In compliance with the Bagley-Keene Open Meeting Act (Government Code sections 11120-111321), all AAG meetings shall be open to the public and meetings will be publicly noticed on the CDFA website a minimum of ten (10) days before each meeting. Due to COVID-19, meetings will be held using remote meeting software and members of the public will be permitted to attend and participate at appropriate points in the meeting agenda.

Decision Making

The AAG will strive for consensus decision-making in its deliberations. The definition of consensus spans the range from strong support to neutrality, to abstention, to "I can live with it". An AAG member can "stand aside" and let the remaining AAG members reach consensus as defined by one of the levels of support described above. This would still constitute a consensus agreement and outcome but with the individual that is

standing aside noted on the record as having done so. If consensus cannot be reached for a given recommendation, the AAG will forward the options considered to the EFA SAP, with an accompanying explanation of areas of consensus and divergence, for consideration. The AAG will strive to prioritize consensus recommendations.

Communication between AAG members shall be conducted in compliance with existing laws governing interactions for all State boards and commissions.

Participation Agreements

CDFA staff, CCP Facilitators and AAG members will work together to create a problem-solving environment and to implement the following agreements to that aim:

- Commit to attend and contribute to the three meetings: If unable to attend a meeting, AAG members are welcome to submit written materials to their fellow AAG members prior to the meeting which they will miss to their fellow AAG members. If you are unable to attend a meeting, please inform the Facilitation Team and submit thoughts and feedback on materials under discussion in advance of the meeting in writing.
- Use common conversational courtesy (i.e., refrain from interrupting another speaker).
- All ideas and points of view have value: We are looking for innovative ideas. The goal is to achieve multi-participant understanding and, if feasible, concurrence on various recommendations by a diverse range of specialists. During AAG discussions, the goal of each member presenting an idea should be to first frame their input in the context of their "interests" – the needs that they and their similar stakeholders / constituents seek to achieve. When an AAG member is presenting, the responsibility of all other participants is to closely listen and consider the input and avoid immediate judgement and dismissal. No AAG member is obligated to agree to the comments of another member. Rather, the process will be most constructive if all members focus on stated interests and suggested solutions, and then provide similar comments that ideally seek to address multiple interests and needs.
- Be honest, fair, and as candid as possible: Help others understand you and work to understand others. As stated above, this objective can be most effectively served if all members speak about and assess topics from a standpoint of what their interests / needs are, and what the understood needs of other AAG members are.
- Avoid editorials: It will be tempting to analyze the motives of others or offer editorial comments. Please talk about your own ideas and thoughts. Avoid commenting on why you believe another participant thinks something.
- Honor time and be concise.
- Think innovatively and welcome new ideas: Creative thinking and problem solving are essential to success. "Climb out of the box" and attempt to think about the problem in a new way; particularly in the recommended context to speak from a place of described interests and needs, rather than "wants".
- Invite humor and good will but ensure that humor never occurs at the expense of other members or their represented community / organization.

- Be comfortable – take personal breaks as needed.

External Communications

Members will be sent surveys and draft documents in advance of and in preparation for meeting discussions Members are asked and expected to prevent distribution of DRAFT or Confidential – for Internal Use Only documents outside of the AAG. Likewise, when communicating outside of the AAG, members are expected to speak only for themselves if asked about AAG progress. The temptation to discuss someone else's statements or position should be avoided. CDFA staff will be tasked with posting all documents ready to be reviewed by the public. AAG members are encouraged to direct members of the public to documents posted on the CDFA website and to CDFA representatives, rather than sending what may be out of date documents.

Agency or Official to Whom the AAG Reports

The AAG's final recommendation report will be presented to the EFA SAP for consideration and published for public comment, which will be reviewed by the EFA SAP.

Support of the AAG Process

Management and support services shall be provided by CDFA staff and facilitators from the California State University Sacramento campus-based Consensus and Collaboration Program (Facilitation Team). The Facilitation Team will provide online-based meeting facilitation and management services, including encouraging and balancing participation, maintaining focus, promoting good faith discussions (sharing information, seeking to understand one another, generating inclusive solutions), and assisting in crafting the final recommendations report.

Recordkeeping

Meetings of the AAG will be recorded, and summary reports of the deliberations will be created and posted to the CDFA website and made available to the AAG membership within two weeks after each meeting.

Appendix D: Opposition Points to Recommendations

The AAG indicated their level of support for each of 48 recommendations that were developed through the three-meeting process. If an AAG member indicated that they opposed one of the recommendations, they were given an opportunity to provide their opposing viewpoint. Not all participants provided an opposition statement, but their opposition is reflected in Tables 4-6 in the Recommendations section of the report.

The opposition statements below are paraphrased for clarity and consistency.

Recommendation: CDFA will develop a "Technical Service Provider list" to assure suppliers have experience and stable support for the irrigation water management (IWM) products for the length of term. Have vendors and technology associated with IWM vetted. A committee should be formed to determine further development of this providers list.

Opposition:

- A member of the AAG opposed the Technical Services Providers list because they felt it is too costly and time consuming for this small program and there are numerous other sources the public can utilize to determine the validity of services providers.
- A member of the AAG indicated that there is no need for a committee.
- A member of the AAG thought that this sounds like a big project, and not appropriate for a CDFA committee to evaluate technical service providers. It was not apparent to the member of the AAG during the discussion that there had been a sufficient level of difficulty with the technical service providers to justify this effort.

Recommendation: CDFA will allow Irrigation Water Management (IWM) systems to have 3 years of funding for the annual subscription. CDFA should reduce the life of the project for IWM from 10 to 3. The AAG would like to require CDFA to verify that the IWM application platform is operating during the time of verification. The AAG would like to require CDFA to verify prolonged operation during the 3-year term. CDFA should account for this change in the water/GHG calculations.

Opposition:

- A member of the AAG wrote that the expectation for the life of all projects has consistently been 10 years. With this proposed change, there might not be as large of a return on investment over time as for other projects. Given the high cost of some IWM systems, it seems important that they provide benefits in the long term.

Recommendation: CDFA will post a list of regional vendors on the website based off vendors that wish to be included on this list. CDFA should send out emails or web

postings to have vendors signed up to be on this list. CDFA should use the list that CDFA already has, based off past applications, as a steppingstone for creating this list. CDFA should allow for growers to provide "reviews" on this list.

Opposition:

- A member of the AAG wrote that it is too much time and expense for this small program to have to manage a vendor list and it is a duplication of information readily available to the public through numerous sources.

Recommendation: CDFA will encourage innovative approaches by updating the application and GHG/water savings tool to allow for growers to insert their own project types. Specifically, CDFA should allow for an 'Other' section in the GHG and water savings tools so growers can add their own projects and explain how they came to the savings they insert. CDFA should clarify in the application that other practices, besides the short list of common practices (drip irrigation, pump conversion, etc.), are allowed and encouraged. Fertilizer application type could be in the other category that is developed. This would require an update to the Quantification Tool to include an "other" selection.

Opposition:

- A member of the AAG wrote that this could lead to lots of speculations and inclusion of unproven technologies. This member stated that there is no direct connection between fertilizer applications and water/energy savings.

Recommendation: CDFA will allow for move-able technologies. Some water saving technologies can move with rotating growers (movable pump, portable soil moisture, etc.). CDFA should allow for technologies to move APNs. This would need to be determined to be acceptable by technical reviewers and included in the application.

Opposition:

- A member of the AAG wrote that it is true that portable equipment can lend itself to efficiency improvement, however, moveable or portable equipment can very quickly become taken advantage of and misused. Permanent equipment is the best way that the taxpayer can be assured that the claimed benefits are being realized.

Recommendation: CDFA will encourage innovative approaches by updating the application and GHG/water savings output to allow for growers to insert additional "alternative technologies and practices". CDFA should allow for the Technical Reviewer (TR) to approve "alternative technologies and practices". CDFA should allow applicants to provide additional documentation to support the GHG and water saving of the project. Examples such as fertigation, weed control. CDFA should exclude non-vetted technology and practices. CDFA should stick with the water and GHG calculators and give it an additional consideration point if the TR approves. CDFA should cap the

amount of points attributed to the GHG/ water offset to 5% for all "alternative technologies and practices' that are approved by the TR.

Opposition:

- A member of the AAG wrote that this could lead to speculation and felt that there is no direct connection between these practices and water/energy savings.
- A member of the AAG wrote that the SWEEP program should not be paying farmers to implement routine farming practices such as proper weed control.

Recommendation: CDFA will create pathway for innovative technology inclusion. CDFA should find a way to allow for new innovative technology to be allowable within SWEEP. There should be a clear pathway for new, innovative technologies or practices to be included in SWEEP.

Opposition:

- A member of the AAG stated that research should be funded by another program.
- A member of the AAG thinks SWEEP funding should not be used in this area and that other state programs should provide funding. Technologies that are not at the commercial stage and proven should not be funded.
- A member of the AAG thinks there are other places and other funding streams for this. This is not the place to vet or test new technology.
- A member of the AAG stated that Innovative Technologies Grants are being provided and technologies developed through the California Energy Commission, this includes the agricultural water and energy sector and savings focus. Additionally, PG&E provides New Energy and Water Technology development moneys through their Innovative Technologies Program. Innovative Technology Development grants offered by CDFA in addition to the aforementioned, would be a duplication of numerous corporate grants.

Recommendation: CDFA will develop a "Whole Farm" criteria which includes actions to reduce carbon on an operational basis. e.g., conversion of diesel equipment to electric. CDFA should add a GHG benefit if charging is done with onsite solar and battery storage. This recommendation is for a consortium of farmers that might be able to save GHG on a larger level using things such as refrigeration, which is a large energy saver. Allowing for a consortium of farmers can result in a larger group savings of GHG. This would allow for packing houses, etc. to be included.

Opposition:

- A member of the AAG stated that although this might be more comprehensive, it will likely become so complicated that it cannot be realistically used. To support something this complicated, we need further information.

- A member of the AAG thinks SWEEP should maintain its focus on water efficiency. There are other state programs incentivizing the transition to electric vehicles and more energy-efficient agricultural processing.
- A member of the AAG thinks that this opens up a wide range of potential proposals which will be very difficult to review and compare. Could a consortium apply to purchase electric cars to give to their employees to use for commuting?

Recommendation: CDFA will use water and energy "productivity" and not savings when calculation water and energy. CDFA should calculated based of the yield per unit of energy/water unit. CDFA should obtain water use data and yield records for pre and post projects. CDFA should incorporate this an either/or option so that farmers can demonstrate savings using either approach. CDFA should require the cost of that energy/water to be delivered in the application. This allows for a calculation of the cost associated with the savings.

Opposition:

- A member of the AAG thinks productivity is related to many factors and not just water/energy.
- A member of the AAG thinks that this approach could make some projects that have a lot of benefit in one area and not the other not funded. A comparison of analyses needs to be shown before it can be supported.
- A member of the AAG stated that this sounds complicated. Diverse operations may not have all the yield data that would be necessary to complete these calculations.
- A member of the AAG stated that this is too complex & subjective.
- A member of the AAG stated that the idea of productivity, often at the expense of natural resources, human rights, and ecological diversity got us the point of critically over-drafted ground water basins and over-subscribed water delivery systems. This member does not feel like we should elevate this metric for righting the ship. As a concrete example, a productive field (with regard to water and energy) is fallow half the year, has a drip system, plays home to aggressive plants bred for their purpose, is weed free and farmed in the most mechanized way possible. But this field is void of life outside of its growing season, does not support a natural water cycle, and its commodity crop is shipped around the world. Productivity alone will not protect California agricultural lands for the centuries ahead.

Recommendation: CDFA will use water and energy "productivity" and not savings when calculation water and energy. CDFA should calculated based of the yield per unit of energy/water unit. CDFA should obtain water use data and yield records for pre and post projects. CDFA should incorporate this an either/or option so that farmers can demonstrate savings using either approach. CDFA should require the cost of that

energy/water to be delivered in the application. This allows for a calculation of the cost associated with the savings.

Opposition:

- A member of the AAG stated that most growers do not want to share yield data.

Recommendation: CDFA should provide outreach, educational materials and, to the degree possible, the application in multiple languages, prioritizing Spanish. Additionally, technical assistance in various languages should also be provided and prioritized.

Opposition:

- A member of the AAG indicated that they found that the materials in languages other than English were not an effective method of getting the information across, and feel the more effective method is to have personal representatives available for Non English Speakers to assist in the application process and overall Program information.

Recommendation: CDFA will require training opportunities to both potential applicants and to awardees in various languages from relevant experts on related topics, including, but not limited to, effectively using relevant technologies, equipment (e.g., irrigation system maintenance) and practices (i.e., distribution uniformity, irrigation scheduling, etc.).

Opposition:

- A member of the AAG stated that anytime some requirement is added onto an already extensive list requirements, potential good projects drop off because it becomes not worth the applicant's time. The member indicated that training should not be required.

Recommendation: CDFA will require training opportunities to both potential applicants and to awardees in various languages from relevant experts on related topics, including, but not limited to, effectively using relevant new technologies, equipment, and practices.

Opposition:

- A member of the AAG stated that CDFA should host training opportunities for both potential applicants and awardees, but that they don't think it should be required. The grant is currently set up where attending a training gives an applicant an extra point and they believe this system is working well.

Recommendation: Pump test and energy/water records are not required to apply for SWEEP support, but would be required to receive funding if the project is approved. SWEEP application to include pump efficiency estimate (based on pump age or expert judgement) with actual test completed if project is selected. For projects selected,

allow applicants to submit pump test costs as a project expense. Also, allow other entities to cover the cost of the smaller pump tests).

Opposition:

- A member of the AAG stated that requiring the info up front helps reduce the potential for funding projects that can't be supported by a lack of documentation. Good planning up front is valuable.
- A member of the AAG stated the water records and pumps testing are the low cost, no cost starting point for the determination of water and energy savings projects. Pump testers provide both the energy/GHG and water statistics that the project applicants, engineers, and pump contractors utilize to determine if there is a project to apply for.

Recommendation: CDFA to develop and maintain a roster of manufacturers and vendors who are willing to provide cost quotes for small farm/ranch operations.

Opposition:

- A member of the AAG thinks this is too time consuming and expensive to manage and maintain.

Recommendation: Simplified application for all growers: Only relevant information, maybe curb requirements for 3 years control of land and historical records, remove questions that would be a barrier to applicants who do not want to expose sensitive information (yield, etc.).

Opposition:

- A member of the AAG stated that farmers who are applying to receive a large amount of money like this should be willing to share meaningful information about the operation in question, if that information assists in the evaluation of the merits of the proposal.

Recommendation: During the application process, CDFA should give priority to small farmers beyond SDACs and SDFRs based upon a statement of need and survey response. Survey questions could include the following: 1) Acreage farmed, 2) Income range of farmer, 3) Number of employees, 4) Percentage of employees that are family members, 5) Primary language other than English, 6) Production costs as a percentage of income, 7) Commodity grown, 8) Gross receipts (under $250k).

Opposition:

- A member of the AAG stated that many small farms are lifestyle endeavors may generate very little profit. These operations should not receive funding priority over full-time farmers who are focused on producing crops.

Recommendation: CDFA should divide funding into two categories: "Water-focused" or "water- and GHG-focused" potentially setting aside specific funding amount for each category of project.

Opposition:

- A member of the AAG stated that there is usually energy savings in water savings projects so want to capture the GHG reductions due the energy savings in the water projects.

Recommendation: Instead of only one maximum request for SWEEP, CDFA should define two cost category scales for SWEEP projects including (1) small cost projects ($50,000 maximum request with simplified application), (2) medium cost projects and large cost projects ($50,000-130,000 maximum request).The majority of funds would go to the medium bucket; however, the number of small projects and reach would far exceed that of larger projects.

Opposition:

- A member of the AAG stated that this is too complicated, doesn't streamline the process.

Recommendation: CDFA should coordinate with GSAs to avoid incentivizing projects on land that will be fallowed due to SGMA. GSAs should thoroughly investigate and review projects and provide letters of support if able. This would be most applicable to medium and large funding requests.

Opposition:

- A member of the AAG stated that they support CDFA and the EFA SAP having more regular communication with GSAs. However, they oppose GSA's reviewing projects and providing letters of support for three reasons: 1) the AAG member thinks that GSAs likely do not have capacity to take this on anytime in the near future; 2) the AAG member thinks that some GSAs have not done a good job representing the interests of small-scale farms, so the member would not want small-scale farms' SWEEP applications to be disadvantaged by not being able to get a letter from their GSA; 3) the AAG member thinks that GSAs will not be deciding which lands get fallowed, so cannot provide CDFA with that information.
- The AAG member thinks that not all areas currently have GSA's organized to an extent that they would even be able to entertain the idea of reviewing a proposed project. It may be several more years before some areas have reached the level of organization where this type of request could be responded to.

Recommendation: CDFA should evaluate projects on land to be fallowed due to SGMA. GSAs should evaluate projects and provide letters of support if in approval of project. Support letters would be advisable, but not mandatory to apply to SWEEP and applicable to medium and large cost projects. CDFA and the Science Panel should continue discussion with GSAs due to uncertainties in the future due to SGMA.

Opposition:

- The AAG member thinks that GSAs shouldn't be involved because many have growers on the board and there could be conflicts of interest.
- A member of the AAG stated that they support CDFA and the EFA SAP having more regular communication with GSAs. However, they oppose GSAs reviewing projects and providing letters of support for three reasons: 1) the AAG member thinks that GSAs likely do not have capacity to take this on anytime in the near future; 2) the AAG member thinks that some GSAs have not done a good job representing the interests of small-scale farms, so the member would not want small-scale farms' SWEEP applications to be disadvantaged by not being able to get a letter from their GSA; 3) the AAG member thinks that GSAs will not be deciding which lands get fallowed, so cannot provide CDFA with that information.
- The AAG member stated that in their area of multiple high-priority groundwater basins where fallowing will likely be part of our response, nobody has any idea right now where such fallowing may occur. The concept is good, but the circumstances do not exist to allow this to happen. The best way to avoid having farmers receive funds for unexpectedly short-lived projects is to make sure they themselves have significant financial "skin in the game".

Recommendation: CDFA should create an avenue for application by irrigation districts, incorporating groups of growers.

Opposition:

- The AAG member stated that it would be hard to implement and these groups typically represent a region and not statewide that puts farmers outside the area covered by a given group at a disadvantage.
- The AAG member stated that the existing efforts such as WaterSmart should be analyzed to determine if this avenue is really needed, or even feasible.
- The AAG member stated that this adds additional layers and doesn't streamline the process. Politics could come into play with growers sitting on these boards.
- The AAG member stated that there are already other avenues for this type of funding such as IRWMP and BLM's Water Smart Grants that groups of growers can apply for.

- The AAG member stated that most Irrigation districts have funds for water improvements. Plus, an individual farmer is easier to oversee than a group. With individual farmers there's no question who met or didn't meet the criteria.

Recommendation: CDFA should weigh the value of types of benefits with or against regional needs.

Opposition:

- The AAG member stated that this would require a major analysis and could cut out some really good projects.
- The AAG member stated that the need for GHG reduction and water use savings cuts across regions. How will CDFA determine what regional needs are?

Recommendation: CDFA should give some priority to critically (or approaching critically) over-drafted groundwater basins.

Opposition:

- The AAG member stated that in the past it seems that the SWEEP program gave priority to specific areas, and it marginalized some farmers who were not eligible or receiving SWEEP grants.

Recommendation: CDFA should give some priority to regions with higher agricultural production.

Opposition:

- The AAG member stated that SWEEP already has a reputation that only certain regions of California get SWEEP awardees and they believe this will only heighten those discrepancies. It's important that potential applicants feel they all have an equal chance at receiving grants.
- The AAG member stated that they opposed this because there are areas with low agricultural production with high populations of underserved farmers.
- The AAG member stated that in the past it seemed that the SWEEP program gave priority to specific areas, and it marginalized some farmers who were not eligible or receiving SWEEP grants.

Recommendation: CDFA should give some priority to regions with higher agricultural employment.

Opposition:

- The AAG member stated that farmers should be able to seek grants irrespective of where they are located. The program already has restrictions in terms of water efficiency and GHG reductions.

- The AAG member stated that regions that are prioritized should be based on natural resource needs rather than agricultural production factors.
- The AAG member stated that in the past it seemed that the SWEEP program gave priority to specific areas, and it marginalized some farmers who were not eligible or receiving SWEEP grants.

Recommendation: CDFA should allow for collaborative solar installations (with multiple farmers).

Opposition:

- The AAG member stated that large solar projects could pull to much funding from program limiting the number of growers who can participate.
- The AAG member stated that solar installation is an economic decision that ag producers make. The goal of SWEEP is to help producers reduce the amount of water used and amount of GHG produced, not to help them convert operations based on economic variables.

Recommendation: CDFA should require a justification from applicants that apply for on-farm weather stations as to why CIMIS information is not sufficient.

Opposition:

- The AAG member stated that there are many reasons that a CIMIS station would not provide accurate weather data at a farm level. A key one is for frost prediction which needs to be correct and a station 5 miles away cannot do this. A grower should not have to justify this, a local on-farm station is a correct and important tool.
- The AAG member stated that CIMIS stations lack accuracy. Also, these are widely spaced and do not take into account for microclimates.
- The AAG member stated that microclimates differ greatly in California and actual on- farm weather sites give better information. They do support capping the amount paid for these weather stations.
- The AAG member stated that CIMIS is a nice template in a general sense for how plants are using water. However, there are microclimates even within each ranch and it seems like overkill to make someone justify this.
- The AAG member stated that in-situ weather stations can provide better and more accurate information to make irrigation decisions. In-situ weather stations are recommended for better water savings.
- The AAG member stated that CIMIS stations are not being periodically maintained as they originally had been planned to be. Hence, the majority of evapotranspiration rates at many of the state's CIMIS stations are not up to date.

Recommendation: CDFA should cap the amount of funding per project for weather stations

Opposition:

- The AAG member stated that these are inexpensive already so this would add another layer that is not necessary.
- The AAG member stated that CIMIS data is often unreliable and prone to large gaps/missing data. California has hundreds of microclimates so having an on-site weather station is more accurate and useful than CIMIS.

Recommendation: CDFA should coordinate with the Association of California Water Agencies.

Opposition:

- The AAG member stated that they are not sure what the coordination will do.
- The AAG member stated that it has not been their experience that water agencies do not work with agriculture, they wonder if there was some misinterpretation that this is supposed to be agriculture's Clean Water Alliance.

Recommendation: CDFA should establish a technology committee or an innovation team that understands pump efficiency and water metering technology to benefit both GSAs and farmers.

Opposition:

- The AAG member stated that this knowledge already exists in the Irrigation Training & Research Center at Cal Poly San Luis Obispo and the Center for Irrigation Technology at Fresno State.

Recommendation: CDFA should work with organizations to identify farmers who are "ready".

Opposition:

- The AAG member stated that the program is oversubscribed. Clarity is needed on what organizations are intended and what does "ready" mean.

Recommendation: CDFA should prioritize strategic outreach coordination in appropriate locations with Farm Bureaus and GSAs (because they are involved with all sizes of farms) and at trade shows and commodity groups.

Opposition:

- The AAG member stated that these should be awarded and disbursed by CDFA, not a third party.
- The AAG member stated that outreach by Farm Bureau and GSAs should not be prioritized. These groups do not prioritize outreach into disadvantaged communities.

- The AAG member stated that there are other water organizations that currently provide help to farmers besides the Farm Bureau and groundwater sustainable agencies. In the Imperial Valley, IVH2O or Imperial Valley Water helps farmers and there isn't a groundwater agency because there is no useable groundwater.