

California Department of Food and Agriculture  
ENVIRONMENTAL FARMING ACT SCIENCE ADVISORY PANEL

MEETING AGENDA

September 10, 2014  
10 AM to 4 PM

Room G  
Harvest Hall  
Stanislaus County Agricultural Center  
3800 Cornucopia Way  
Modesto, Ca 95358  
916-654-0433

Call in information:  
Please call 1-877-238-3859  
Participant passcode - 3964856#

Don Cameron, Member and Chair

Mark Nechodom, PhD, Member

Jocelyn Gretz, MSc, Member

Mike Tollstrup, Member

Jeff Dlott, PhD, Member

Luana Kiger, MSc, Subject Matter Expert

Doug Parker, PhD, Subject Matter Expert

- |  |                    |
|--|--------------------|
| 1. Introductions and updates                                   | Don and Amrith     |
| • Minutes from previous meetings                               |                    |
| • State Water Efficiency and Enhancement Program (SWEEP)       |                    |
| • GEELA update   |                    |
| 2. AB 32 Scoping plan – how can EFA SAP contribute?            | Amrith and Mike    |
| 3. SWEEP – 2 <sup>nd</sup> solicitation                        | Amrith and Carolyn |
| 4. Future Direction  | Don and Amrith     |
| • Biochar  |                    |
| • Environmental Farming Act – defining “incentives to farmers” |                    |
| 5. Public comment  | Don                |
| 6. Next meeting and adjournment                                | Don                |

Amrith Gunasekara, PhD, CDFA Liaison to the Science Panel

All meeting facilities are accessible to persons with disabilities. If you require reasonable accommodation as defined by the American with Disabilities Act, or if you have questions regarding this public meeting, please contact Amrith Gunasekara at (916) 654-0433.  
More information at: <http://cdfa.ca.gov/Meetings.html> and [http://www.cdfa.ca.gov/EnvironmentalStewardship/Meetings\\_Presentations.html](http://www.cdfa.ca.gov/EnvironmentalStewardship/Meetings_Presentations.html)



### 3. Agriculture



Agriculture in California provides a safe, reliable, and affordable food source to support growing local, State, national, and global populations. It is also a key economic driver in the State. California has a range of climatic regions that allow for the production of a diverse variety of annual crops (such as vegetables and grains), perennial crops (such as fruits and nuts), and livestock and dairy products. As one of only five Mediterranean growing regions on Earth, California is a major contributor to the global food supply; particularly of fruits, nuts, vegetables, and dairy products.

California's agricultural GHG emission inventory includes on-site emissions from enteric fermentation (by animals), manure management, rice cultivation, energy use (including fuel combustion), crop residue burning, and soil management practices (fertilizer and manure applications). The primary GHG emissions from agriculture include methane (CH<sub>4</sub>), carbon dioxide (CO<sub>2</sub>), nitrous oxide (N<sub>2</sub>O), and black carbon. In 2012, agricultural sources accounted for about eight percent of California's total GHG emissions. In addition to being a GHG emissions source, agriculture can also be a carbon sink, where carbon is stored (sequestered) in both crops and soil.

Many of the strategies to reduce GHG emissions or increase sequestration in the agriculture sector overlap and have synergies with other sectors. For example, agricultural operations are the largest water users in the State. Because water use is a significant source of GHG emissions (due to the electricity used to pump water), conservation and water delivery efficiency improvement efforts employed in agricultural operations would support GHG emission reduction goals in the water sector. Agricultural operations can also contribute to the strategies for reducing GHG emissions in the energy sector by providing biomass feedstock resources for bioenergy production (for both fuels and electricity). Reduction strategies described in the transportation, land use, fuels, and infrastructure sector could also be realized through agricultural land conservation efforts, and through operational efficiency improvements that reduce transportation emissions and fuel use.

Due to the wide diversity of crop and livestock production, the agricultural sector presents unique challenges to controlling GHG emissions. The initial Scoping Plan considered voluntary steps to reduce GHG emissions in this sector in place of regulatory measures, due primarily to costs and scientific uncertainty in measuring GHGs in many agricultural systems.

The installation of manure digesters to reduce methane emissions was included as a voluntary strategy for the agricultural sector in the initial Scoping Plan. However, voluntary installation of anaerobic digesters at dairies in California has not increased as expected. This is due to the recent economic recession, increased feed and fuel prices, lack of sufficient financial incentives, and insufficient utility contracts. ARB is working with federal, State, and local agencies, as well as with industry stakeholders, to remove obstacles to digester installations. Critical to this is the continued effort to evaluate the many co-benefits of manure management through digesters. The evaluation will examine the potential for successful voluntary efforts to be more widely adopted in California. As new information becomes available, ARB will work with stakeholders to determine whether and how the program should become mandatory and/or more strongly incentivized.

The initial Scoping Plan also called for research on baseline nitrous oxide (N<sub>2</sub>O) emissions from the use of fertilizers to improve the GHG inventory. ARB, CEC, and CDFA have been coordinating and funding research to determine baseline N<sub>2</sub>O emissions from a variety of soil types, crops, and farming techniques used throughout California. Research began in 2009 and is expected to be completed by the end of 2014.

A number of other potential voluntary GHG-reduction activities were mentioned in the initial Scoping Plan, including improvement of agriculture water use efficiency, increasing the efficiency of or electrification of agricultural water pumps, using biomass-based fuels, and increasing carbon sequestration on agricultural lands.

The CDFA, in partnership with scientists at the University of California (UC) at Davis, and with funding from the CEC, are evaluating the economic, beneficial environmental factors and costs of biofuel feedstock crops. Outcomes will focus on cropping systems for California with best management practice recommendations; estimates of direct environmental costs such as water use, input levels, and effects; and potential off-farm environmental consequences. The CDFA is working with ARB to expand use of biomass-based transportation fuels as a regulatory pathway under the Low Carbon Fuel Standard.

The CDFA is also supporting projects that address GHG mitigation through its Specialty Crop Block Grant Program (SCBGP). Results of funded research projects provide knowledge and tools to help growers reduce GHG emissions and increase carbon sequestration.

As discussed in Chapter II, there is increased recognition of the significant role that short-lived climate pollutants have on climate change. In response, the importance of methane emissions from agricultural operations, particularly from rice and cattle operations, has increased. Consequently, there is a need for enhanced efforts to secure additional methane reductions from agricultural operations.

## Maintaining Momentum

There are many GHG emission reduction and carbon sequestration opportunities that could be realized in the agriculture sector. However, because of limited research, and the wide variety of farm sizes, animals, and crops produced, there are few one-size-fits-all emission reductions or carbon sequestration strategies for the agriculture sector.

Agricultural operations throughout the State are variable, there are a number of potential GHG sources at each operation, and a number of potential co-beneficial management practices can be used for each source. To address this complexity, one approach to reducing GHG emissions from agriculture in California is to develop agriculture-sector mid-term and long-term 2050 GHG emission reduction planning targets.

To meet GHG emission reduction planning targets, farmers and ranchers could assess their on-farm GHG emissions and determine which GHG emission reduction management practices work best for their particular situation. In many cases, pursuing the GHG emission reduction

practices would build on existing efforts already in use to increase operational efficiency, reduce criteria pollutant emissions, and reduce costs.

The sections below detail some of the areas with potential emission reduction/sequestration opportunities, as well as areas that need additional research. These opportunities may yield multiple co-benefits, including cost and resource savings, to growers.

### ***Nitrogen Management***

Nitrogen fertilizers applied to crops release  $N_2O$ , a significant source of agricultural GHG emissions. Obtaining more specific data on statewide fertilizer use in agriculture

## SUCCESS STORY

The broadband Internet technology driving the information revolution is also driving revolutions in energy efficiency and GHG reductions for farming. So-called M2M (machine-to-machine) technology now allows precision farming technology to more efficiently apply fertilizers and pesticides, helping reduce GHGs and other air pollutants. Wireless soil moisture sensors reduce water use, saving electricity costs for pumping and moving the water. Some growers claim crop yield increases as a result of more effective monitoring and timing of irrigation—a benefit appreciated all the more during a drought.



and nitrogen deposition on land would help ARB determine baseline emissions and improve the GHG N<sub>2</sub>O inventory. This information would also help guide the development of potential GHG emission reduction measures. Existing nitrogen tonnage reports and new reporting requirements under development by the Regional Water Quality Control Board (RWQCB) could be utilized to improve the existing GHG N<sub>2</sub>O inventory for fertilizer. Further examination of these data will help determine if broader statewide fertilizer use reporting is needed.

There are several practices that have been shown to reduce emissions of N<sub>2</sub>O in agriculture, including the use of nitrification inhibitors, fertigation (the application of fertilizer through irrigation systems), and other approaches. When fertigation is combined with precision drip irrigation there are opportunities to both reduce water and nitrogen fertilizer use. Additional research is needed to evaluate the potential for GHG emission reductions.



### **Manure Management**

Livestock manure is a significant source of methane, and approximately half of the methane generated from livestock comes from manure storage lagoons. The methane generated from those lagoons can be captured by covering the lagoons and can be used to produce energy or renewable fuel (e.g., with the use of a digester).



### **Soil Management Practices**

Historically, tilling (loosening and turning) of soil has been a fundamental agricultural practice to suppress weeds and loosen compacted clay soils. However, tillage releases large quantities of CO<sub>2</sub> and N<sub>2</sub>O from the soil into the atmosphere. Several alternative methods, including changing tillage or cropping patterns, may reduce the release of GHGs. Some soil management practices, such as reduced tilling, can also result in reduced fuel consumption by farm equipment, providing additional permanent reductions in GHG emissions, including short-lived climate pollutants.



### **Water and Fuel Use**

A new generation of technologically advanced tools, such as remote irrigation systems, will play an important role in water conservation efforts, maximizing operational efficiency and optimizing resources that can also reduce GHG emissions. In addition, the application of precision irrigation to crops can reduce water use (in turn, reducing the GHG emissions associated with the energy needed to deliver the water), which may also reduce fertilizer use—both of which can reduce emissions and costs.



Greenhouse gases and other emissions from the operation of internal combustion engines that power farm equipment and water pumps are a concern from a regional air quality and climate change perspective. To reduce emissions, the cleanest, most-efficient, and well-maintained equipment should be used for agricultural operations.

The agriculture sector can also play an important role in producing fuels. Biofuel production is a renewable energy resource that reduces reliance on fossil-based fuels. Fueling equipment with biofuels generated on-site or nearby can also reduce emissions and fuel costs.



### **Land Use Planning to Enhance, Protect, and Conserve Lands in California**

Recent research has shown that GHG emissions from urban areas are much greater than those from agricultural lands on a per-acre basis. As California's population increases, pressures to convert agricultural croplands and rangelands to urban and suburban development also increase. Conservation of these lands will be important in meeting our long-term climate goals. Farmland and open space conservation can be an important policy to support the objectives of the Sustainable Communities Strategies, including reducing vehicle miles traveled. This could be accomplished by using incentives for conservation easements, supporting urban growth boundaries, and maintaining agricultural zoning.

As also described in the Natural and Working Lands Sector section below, to meet the State's GHG reduction goals it is important to take an integrated and coordinated approach to local land use planning that considers all land types, including urban, agricultural, and natural and working lands, within and across jurisdictions, to create interconnected land areas and ecosystems. Local and regional land use planning actions and policies need to more fully integrate and emphasize land conservation and avoided conversion of croplands, forests, rangelands, and wetlands, as well as expansion and promotion of urban forestry, urban agriculture, and green infrastructure.

### ***Highly Efficient Conventional and Organic Agriculture Systems***

Highly efficient management systems (precision agriculture) for both conventional and organic farming may provide climate benefits through reduced GHG emissions and increased carbon sequestration. To realize such systems, a host of agricultural management practices might be required. In addition to potentially reducing GHG emissions, these strategies may also have co-benefits such as reductions in energy and fossil fuel use and improvements in soil carbon content and water quality.

### ***Research, Technical Assistance, and Incentives***

Over the past several years significant progress has been made in understanding agricultural GHG emissions and the strategies that can provide climate benefits. Through research, technical assistance, and financial incentives, farmers and ranchers have implemented many successful GHG emission reduction strategies. Priority should be placed on continued coordination and leveraging of funding between State, local, and national conservation programs to help farmers and ranchers implement GHG emission reduction practices.

## Key Recommended Actions for the Agriculture Sector

- In 2014, convene an interagency workgroup that includes CDFA, ARB, CEC, CPUC, and other appropriate State and local agencies and agriculture stakeholders to:
  - Establish agriculture sector GHG emission reduction planning targets for the mid-term time frame and 2050.
  - Expand existing calculators and tools, to develop a California-specific agricultural GHG tool for agriculture facility operators to use to estimate GHG emissions and sequestration potential from all on-farm sources. The tool would include a suite of agricultural GHG emission reduction and carbon sequestration practices and would allow users to run different scenarios to determine the best approach for achieving on-farm reductions.
  - Make recommendations on strategies to reduce GHG emissions associated with the energy needed to deliver water used in agriculture based on the evaluation of existing reporting requirements and data.
- The Dairy Digester Workgroup will develop recommendations for a methane capture standard by 2016.
- Conduct research that identifies and quantifies the GHG emission reduction benefits of highly efficient farming practices, and provide incentives for farmers and ranchers to employ those practices.
- By 2017, evaluate the data reported to the RWQCB's Long Term Irrigated Lands Regulatory Programs to determine if the reported fertilizer data are adequate to establish a robust statewide GHG N<sub>2</sub>O inventory for fertilizer used in agriculture. If existing data are not adequate to develop an inventory, then develop a mechanism to collect the necessary data.
- In 2015, OPR, the California Natural Resources Agency (CNRA), the California Environmental Protection Agency (CalEPA), CDFA, and ARB will convene an inter-agency workgroup to engage local and regional land use planning agencies in establishing a coordinated local land use program to develop recommendations and targets for incorporating farmland conservation in local and regional land use planning.
- CDFA will strengthen technical assistance programs and associated financial incentives to help agricultural operators develop carbon plans and implement GHG emission reduction practices.
- In 2015, the Bioenergy Interagency Working Group will:
  - Strengthen, refine, and implement actions contained in its Bioenergy Action Plan to promote the input of digester biogas into natural gas pipelines and bioenergy onto the electric grid.
  - Evaluate the potential biomass energy generation capacity.
  - Develop methods to quantify biomass life-cycle GHG flux.



# STATE WATER EFFICIENCY AND ENHANCEMENT PROGRAM

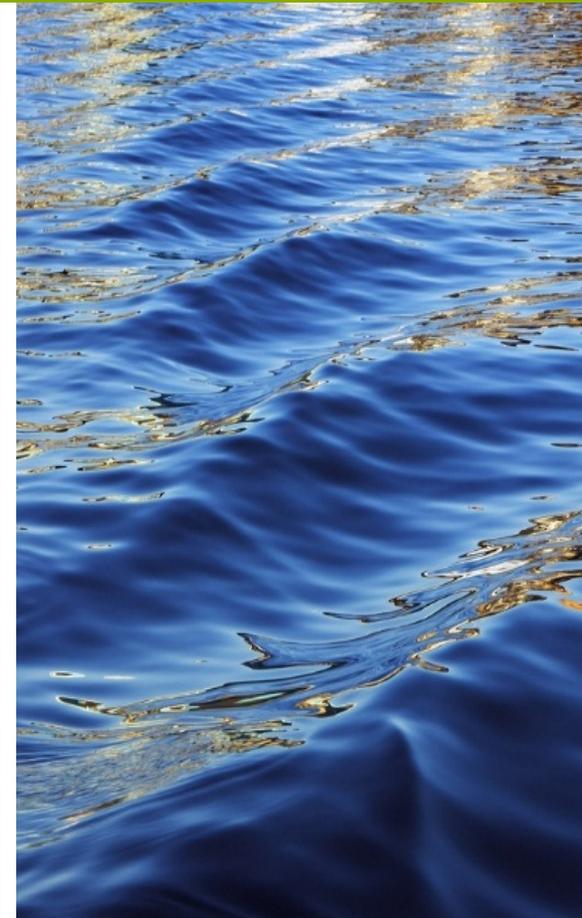
## 2<sup>nd</sup> Solicitation

Proposed Changes  
for Round 2 of  
SWEEP

August 2014



CALIFORNIA DEPARTMENT OF  
FOOD & AGRICULTURE



 CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY  
STATE WATER RESOURCES CONTROL BOARD

CALIFORNIA DEPARTMENT OF  
**WATER RESOURCES**

# WORKSHOP AGENDA

1. State Water Efficiency and Enhancement Program (SWEEP) Requirements
2. SWEEP Application Process
3. Financial Assistance Application Submittal Tool (FAAST) Demonstration

Red font indicates changes to 2<sup>nd</sup> solicitation based on comments received

# PROGRAM PURPOSE & FUNDING

## PURPOSE:

To provide financial incentives for California agricultural operations to invest in water irrigation treatment and/or distribution systems that reduce water and energy use and increase water and energy efficiencies.

## FUNDING:

- Emergency Drought Legislation (Senate Bill 103) – \$10M

First round = 132 applications totaling about \$4.4 million

- Project Grant Amounts – Maximum grant award is ~~\$50,000~~  
**\$300,000 – Almond board suggestion**

- Project Duration – ~~October 1, 2014 – April 1, 2015~~

**December 2014 – June 2015**

# ELIGIBILITY

- Installation must be on a California agricultural operation.
  - An agricultural operation is defined as a row, vineyard, field and tree crops, commercial nurseries, nursery stock production and greenhouse operation.
- The project must reduce water use **and** GHG emissions.
- The project must be in California – As of August 26, 2014, the entire state was classified as either Moderate, Sever, Extreme and Exceptional Drought status by the U.S. Drought Monitor.

# ELIGIBILITY

[Home](#)
[Maps And Data](#)
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**United States Drought Monitor**

Home > State Drought Monitor

## U.S. Drought Monitor California

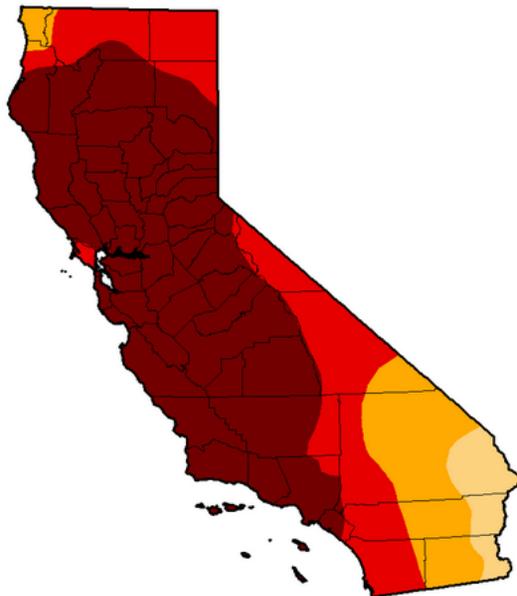
**August 26, 2014**  
(Released Thursday August 28, 2014)  
Valid 8 a.m. EDT

Statistics type:  Traditional (D0-D4, D1-D4, etc.)  Categorical (D0, D1, etc.)

Drought Condition (Percent Area):

Week	Date	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	<a href="#">8/26/2014</a>	0.00	100.00	100.00	95.42	81.92	58.41
Last Week	<a href="#">8/19/2014</a>	0.00	100.00	100.00	97.59	81.92	58.41
3 Months Ago	<a href="#">5/27/2014</a>	0.00	100.00	100.00	100.00	76.68	24.77
Start of Calendar Year	<a href="#">12/31/2013</a>	2.61	97.39	94.25	87.53	27.59	0.00
Start of Water Year	<a href="#">10/1/2013</a>	2.63	97.37	95.95	84.12	11.36	0.00
One Year Ago	<a href="#">8/27/2013</a>	0.00	100.00	98.23	93.86	11.36	0.00

[View More Statistics](#)



### Intensity:

- D0 - Abnormally Dry
- D1 - Moderate Drought
- D2 - Severe Drought
- D3 - Extreme Drought
- D4 - Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying [text summary](#) for forecast statements.

### Author(s):

David Simeral, Western Regional Climate Center

Download: [PNG](#) [PDF](#) [JPG](#)

The National Drought Mitigation Center | 3310 Holdrege Street | P.O. Box 830988 | Lincoln, NE 68583-0988  
phone: (402) 472-6707 | fax: (402) 472-2946 | [Contact Us](#)



# PROGRAM REQUIREMENTS

- One application may be submitted by an agricultural operation with a unique tax ID number. **Allowed to submit for 2<sup>nd</sup> solicitation if submitted and awarded for first solicitation.**
- Funds cannot be used to expand the agricultural operation.
- Projects are expected to be used and maintained for **10 years or according to the USDA NRCS Practice Lifespan Table found at:**  
[http://www.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS/stelprdb1076947.pdf](http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1076947.pdf)
- SWEEP funding cannot be combined with USDA, NRCS Environmental Quality Incentive Program (EQIP) financial assistance.

# PROGRAM REQUIREMENTS (CONT.)

- When applicable, total project costs cannot exceed the cost provided in the USDA, NRCS payment schedule (See Appendix D of your Application Guidelines).

*Example: For a micro-irrigation system in an orchard or vineyard greater than 10 acres in size, the payment schedule indicates a cost of \$638.96 per acre. That is the maximum amount that the program will contribute to the project.*

**No changes**

Practice_ Code	Cost_Share_ Program	Practice_Name	Component	Unit_Type	Unit_Cost
441	EQIP	Irrigation System, Microirrigation	Orchard-vineyard, >10ac	Ac	638.96

# PROGRAM REQUIREMENTS (CONT.)

- If awarded, the grant recipient must agree to a verification component.
- CDFA will coordinate with the Resource Conservation Districts (RCD) to verify proper completion of the project, and to gather quantitative data on water efficiencies gained and reduction of GHG emissions achieved. The verifier will have a checklist of items to confirm including:
  - ✓ Was the system installed properly (as indicated in the design)?
  - ✓ Does it function as designed?
  - ✓ Calculate GHG reductions and water savings

**No changes**

# ONLINE APPLICATION

- To streamline and expedite the application process, CDFWA partnered with the State Water Resource Control Board
- Financial Assistance Application Submittal Tool (FAAST)

<https://faast.waterboards.ca.gov>

No changes

# APPLICATION ATTACHMENTS

Applicants are **required** to submit two attachments:

- **PROJECT DESIGN**
- **BUDGET WORKSHEET**

If contributing funds to the project applicants are encouraged to attach:

- **MATCHING FUNDS DOCUMENTATION**

To ensure that the cash component of matching funds has been secured, attach written documentation to support the project (if needed). The documentation should confirm the contribution source, type, and amount of the contribution.

**No changes**

# PROJECT DESIGN

Project Design must include:

- An explanation of how water efficiencies and GHG reductions will be achieved.
- A schematic detailing the irrigation distribution system layout (e.g., pipelines, valves, filter stations, distribution uniformity values), including agronomic information (e.g., water application rate, crop water demand).

**No changes**

# BUDGET WORKSHEET

All budget items must reflect **only** costs incurred during the implementation phase of the proposed project, and should demonstrate that they are reasonable and adequate for the proposed work.

The budget worksheet (an excel file) will be downloaded by applicants from the FAAST system. It will then be completed by the applicant and uploaded as an attachment to the application.

**No changes**

# REVIEW PROCESS AND CRITERIA

CDFA's intent is to fund projects that can produce the highest degree of water savings **and** GHG reductions.

Two Levels of Review:

1. Administrative – Internal
2. Technical – External

During the technical review process, applications will be prioritized for funding based on 9 criteria. Projects **DO NOT** need to address all criteria to be eligible, but will rank higher if more criteria are incorporated.

# CRITERIA FOR RANKING APPLICATIONS

1. Largest water savings (ac-inches/year/acre) **AND** largest greenhouse gas reductions (Tonnes of CO<sub>2</sub>e/year/acre).
- ~~2. Largest greenhouse gas reductions (Tonnes of CO<sub>2</sub>e/year/acre)~~
- ~~3. Must be in D3 (extreme) or D4 (exceptional) drought designation area (U.S. Drought Monitor) of California as of April 29, 2014. See application guidelines page 6 for a map).~~

# CRITERIA FOR RANKING APPLICATIONS

2. Use of soil moisture sensors (NRCS Practice Standard 449) with electronic data output and flow meters, or electronic weather station linked to irrigation controller, for growers to ensure efficient irrigation scheduling (must specify with a new or existing system); new systems get higher ranking.
3. Use of evapotranspiration (ET) based irrigation scheduling, such as the California Irrigation Management Information System (CIMIS), and flow meters on existing or proposed projects to optimize water efficiency for crops.

No changes

# CRITERIA FOR RANKING APPLICATIONS

4. Reduction of GHGs from water pumping. For example, the conversion of a fossil fuel pump to solar, wind or electric. NRCS Conservation Practice Standard 372 may apply.
5. Use of micro-irrigation or drip systems (including subsurface drip) coupled with a fertigation system and nutrient management plan to replace flood or furrow irrigation. Must follow NRCS Conservation Practice Standards 441 or 442.
6. Installation of subsurface irrigation system coupled with a fertigation system and a nitrogen management plan.
7. Use of low pressure irrigation systems to reduce net pumping and energy use.
8. Use of Variable Frequency Drives to reduce net energy use and match pump flow to load requirements. Recommend following NRCS Conservation Practice Standard 533.
9. Use of sensors such as pressure chambers to measure plant water stress in order to accommodate managed deficit irrigation.

# ADDITIONAL CONSIDERATIONS

In addition to the 9 criteria, three additional factors will be considered during the review process:

## 1. Environmental and social co-benefits

Benefits could include, among others, facilitation of nutrient management, improved air quality and improved water quality.

## 2. Benefits to a disadvantaged community

A “Disadvantaged Community” is defined as a community with a median household income less than 80 percent of the statewide average (See Appendix A of the guidelines).

## 3. Matching Funds – 50% matching funds is encouraged

Applicants choosing to use matching funds are encouraged to submit written documentation describing the source of matching funds with the grant application.

**No changes**

# AVAILABLE RESOURCES

CDFA does not have the resources to assist with project designs, but **strongly** encourages all interested in applying to seek assistance from available resources. See Pages 3-4 of the guidelines.

- Resource Conservation Districts
- USDA Natural Resource Conservation Districts
- Utilities

No changes

# Other Comments

- Project expenses: the breakdown of expenses is extremely detailed and not necessary. NRCS does not require this type of breakdown and I have seen that most irrigation companies are reluctant or refuse to give this kind of detailed breakdown in their quotes.

Discussion item.

- Greenhouse gas calculations are not easy to accomplish, even with the links associated with the application. Working on some easy calculators for growers that will be posted on the website. Both water to energy and energy to GHG reductions are provided.

## Budget Worksheet

Complete the budget worksheet to show the breakdown of cost for the proposed project. Matching funds are strongly recommended, but not required. \*Matching funds can include cash and/or in-kind contributions. The equation to calculate the percentage of matching funds is as follows: total match/total project cost = percentage match. Cash contributions are the amount of funds that will be contributed by the applicant to this project. In-kind contributions include contributions by the applicant in the form of supplies, equipment, and contractor/consultant (labor) involved with the installation of the project. In-kind contributions must be indicated here in monetary value.

<b>Supplies-</b> Itemize all supplies. Supplies are anything with an acquisition cost under \$5,000 per unit. Rows may be added.	Grant Request (in \$)	*Cash Match (in \$) if applicable	*In-kind Contribution (in \$) if applicable
<b>Subtotal (Supplies)</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>Equipment-</b> Itemize all equipment. Equipment is an article of nonexpendable, tangible personal property having a useful life of more than one year and a purchase cost which equals or exceeds \$5,000 per unit (purchased or cost for rental). Rows may be added.			
<b>Subtotal (Equipment)</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>Contractor/Consultant-</b> Compensation for individual contractual fees should be reasonable and consistent with fees in the marketplace for similar services (See NRCS schedules in Appendix D which include labor costs).			
Cost per Hour (including benefits)			
Number of Hours			
<b>Subtotal (Contractor/Consultant)</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>Total</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>



CALIFORNIA DEPARTMENT OF  
FOOD & AGRICULTURE

## QUESTIONS?

Refer to CDFA's State Water Efficiency and Enhancement Program website. It will have copies of these presentations, the application guidelines, and a set of Frequently Asked Questions

<http://www.cdfa.ca.gov/go/WEEP>

General questions may also be submitted to  
[grants@cdfa.ca.gov](mailto:grants@cdfa.ca.gov)

CALIFORNIA CODES  
FOOD AND **AGRICULTURAL CODE**  
SECTION 560-568

560. This article shall be known as the **Cannella** Environmental Farming Act of 1995.

561. The Legislature finds and declares the following:

(a) California agriculture helps to feed the world and fuel our economy. Agriculture provides one out of every 10 jobs in California, and our state has led the nation in total farm production every year since 1948. During 1993, California's 76,000 farms generated nearly \$20 billion in cash receipts and another \$70 billion in economic activity.

(b) Many farmers engage in practices that contribute to the well-being of ecosystems, air quality, and wildlife and their habitat. Agriculture plays a pivotal role in preserving open space that is vital to the environment. Seventy-five percent of the nation's wildlife live on farms and ranches. Freshwater streams and stockponds on farms and ranches provide habitat to millions of fish. Corn, wheat, rice, and other field crops provide bountiful food and habitat for deer, antelope, ducks, geese, and other wildlife.

(c) Environmental laws should be based on the best scientific evidence gathered from public and private sources.

(d) Best scientific evidence should include the net environmental impact provided by agriculture.

(e) Additional research is necessary to adequately inventory the impact that agriculture has on the environment. Recognition should be afforded to **agricultural** activities that produce a net benefit for the environment, which is consistent with the growing trend of providing incentives for the private sector to undertake economic activities that benefit the environment.

564. Unless the context otherwise requires, the following definitions govern the construction of this article:

(a) "**Agricultural** activities" means those activities that generate products as specified in Section 54004.

(b) "Department" means the Department of Food and Agriculture.

(c) "Panel" means the Scientific Advisory Panel on Environmental Farming.

(d) "Secretary" means the Secretary of Food and Agriculture.

566. (a) The department shall establish and oversee an environmental farming program. The program shall provide **incentives to farmers** whose practices promote the well-being of ecosystems, air quality, and wildlife and their habitat.

(b) The department may assist in the compilation of scientific evidence from public and private sources, including the scientific community, industry, conservation organizations, and federal, state, and local agencies identifying the net environmental impacts that agriculture creates for the environment. The department shall serve as the depository of this information and provide it to federal, state, and local governments, as needed.

(c) The department shall conduct the activities specified in this article with existing resources, to the extent they are available.

568. (a) The secretary shall convene a five-member Scientific Advisory Panel on Environmental Farming to advise and assist federal, state, and local government agencies on issues relating to air, water, and wildlife habitat to do the following:

(1) Review data on the impact that agriculture has on the environment and recommend to appropriate state agencies data that the panel approves as scientifically valid. A state agency that receives data recommended by the panel may adopt and incorporate the data into the appropriate program. If a state agency does not utilize the data recommended by the panel, it shall provide the panel with a written statement of reasons for not utilizing the data. The reasons, at a minimum, shall specify the scientific basis for not utilizing the data. The reasons shall be provided within 180 days of receiving the data from the panel.

(2) Compile the net environmental impacts that agriculture creates for the environment, identified pursuant to paragraph (1).

(3) Research, review, and comment on data upon which proposed environmental policies and regulatory programs are based to ensure that the environmental impacts of **agricultural** activities are accurately portrayed and to identify incentives that may be provided to encourage **agricultural** practices with environmental benefits.

(4) Assist government agencies to incorporate benefits identified pursuant to paragraph (1) into environmental regulatory programs.

(b) Members of the panel shall be highly qualified and professionally active or engaged in the conduct of scientific research. Of the members first appointed to the panel, two shall serve for a term of two years and three shall serve for a term of three years, as determined by lot. Thereafter, members shall be appointed for a term of three years. The members shall be appointed as follows:

(1) Three members shall be appointed by the secretary. At least one of these members shall have a minimum of five years of training and experience in the field of agriculture and shall represent production agriculture.

(2) One member, who has a minimum of five years of training and experience in the field of human health or environmental science, shall be appointed by the Secretary of the Environmental Protection Agency.

(3) One member, who has a minimum of five years of training and experience in the field of resource management, shall be appointed by the Secretary of the Resources Agency.

(c) The panel may establish ad hoc committees, which may include professionals or scientists, to assist it in performing its functions.

(d) The panel shall be created and maintained with funds made available from existing resources within the department to the extent they are available.