California Climate and Agriculture Network

Blueprint for a California Program on Climate and Agriculture

Executive Summary

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Executive Summary

Scientists predict that in the years and decades to come, as temperatures continue to rise, we will experience more weather extremes—more frequent droughts, heat waves, wildfires, and floods—that will strain California's agriculture, the leading producer of the country's fruits, nuts, vegetables, and dairy products. Climate change will have implications for our agricultural economy and our food security.

Greenhouse gas emissions must be reduced and a transition to a clean energy economy must be made in order to avoid the worst impacts of climate change. California agriculture can make significant contributions to meet this challenge in unique and profound ways, including renewable energy production, water and energy-use efficiency, carbon sequestration in soils and woody biomass, and management practices that reduce methane and nitrous oxide emissions. Many of these climate-friendly farming systems offer additional benefits to our environment, health and economy.

With the Global Warming Solutions Act (Assembly Bill 32), the most comprehensive climate change law in the country, California is pioneering innovative programs to reduce greenhouse gas emissions and support a clean energy economy, while adapting to the inevitable changes to our climate. However, too little attention has been paid to the state's agriculture and its unique opportunities to provide climate benefits.

Instead, California agriculture faces declining public investment in agricultural research, education, technical assistance, and financial incentives. These cutbacks limit the ability of agricultural professionals to deal with complex new issues like climate change, increasing the agricultural sector's vulnerability to the impacts of climate change.

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The California Climate and Agriculture Network (CalCAN) developed this Blueprint, with input from agriculture and climate change experts, to offer recommendations for the design of a state-funded California Program on Agriculture and Climate (CPAC). The Blueprint is intended to:

- Provide an overview of the ways agriculture can play a constructive role in achieving the state's Assembly Bill 32 (AB 32) goals and meeting the state's related policy objectives found in Senate Bill 535 (SB 535) and AB 1532
- Inform the implementation of a California-wide agricultural program to catalyze farm and ranch practices that mitigate climate change in diverse regions, crops, livestock, and scales and provide co-benefits to our economy, environment and public health
- Highlight "shovel-ready" climate solutions already being practiced by some of California's most innovative farmers and ranchers

Opportunities for Investment in Agricultural Solutions

AB 32 includes the cap-and-trade program that is intended to achieve roughly 20 percent of the state's greenhouse gas emission reduction goals. Overseen by the California Air Resources Board (CARB), the cap-and-trade program places a cap on the greenhouse gas emissions of the largest emitters in the state. The program may provide incentives or investments to achieve greenhouse gas emission reductions and carbon sequestration from agriculture through the carbon market or auction proceeds investment.

Cap-and-trade auction proceeds are a crucial component of meeting the objectives of AB 32. Investment of the funds into activities that achieve greenhouse gas emissions reductions can make the difference in achieving emission reduction goals by a target date of 2020 and beyond.

The Blueprint articulates the vision and design of a California Program on Agriculture and Climate (CPAC) that would guide allocations of cap-and-trade investments in agricultural activities, achieve additional environmental, health and economic benefits, and constructively engage California's agriculture industry in contributing to the state's climate goals.

photo credit: Paolo Vescia

Methodology for Developing the Blueprint

CalCAN conducted 41 interviews with a diverse range of researchers, farmers, ranchers, other agricultural and conservation professionals, and government agency representatives. Their input formed the foundation of recommendations for a state climate change and agriculture program. Following the interviews, CalCAN convened a roundtable discussion with experts to review and refine the first draft of the Blueprint recommendations. After completion of the final draft report, CalCAN staff and advisors met with leaders from relevant state and federal agencies and departments to discuss the draft recommendations. Expert stakeholders, listed in the acknowledgements, reviewed the final Blueprint report.

Objectives: California Program on Agriculture and Climate (CPAC)

The goal of CPAC is to achieve meaningful reductions in greenhouse gas emissions and increased carbon sequestration in soils and woody plants, while supporting multiple co-benefits to farmers, the environment, the economy, and public health.

photo credit: USDA NRCS

CPAC will provide value to farmers and ranchers as they voluntarily opt to participate in education projects, technical assistance and financial incentives, all aimed at easing the path to new farm and ranch management activities that reduce greenhouse gas emissions and increase carbon sequestration. The benefits to participating producers will include reduced costs and related savings, more resilient systems and recognition, if desired, for their efforts.

An important element of CPAC will be support for climate activities that provide multiple co-benefits. Most climate-friendly farm and ranch practices provide environmental and health co-benefits, including healthier soils, cleaner water, cleaner air, and wildlife and pollinator habitat.

Recommendations: CPAC Program Design

To achieve these goals and objectives, the CPAC program should balance and integrate three essential elements through a competitive grants process:

- **Research** to identify and evaluate gaps in agricultural climate mitigation strategies and their co-benefits
- **Education and Technical Assistance** to encourage and enable farmers to manage their operations in ways that reduce greenhouse gas emissions and provide multiple co-benefits
- **Financial Incentives** to implement high priority climate-friendly practices in the operations of farmers and ranchers

The expert stakeholders we consulted overwhelmingly supported a competitive grants program structure. The following specific recommendations on CPAC design characteristics are included in the Blueprint (please see the full report for all of the program design recommendations):

Administering Department: The Governor may consider two possible locations for the program: the Department of Conservation (DOC) within the Natural Resources Agency, or the California Department of Food and Agriculture (CDFA). These departments offer different approaches and strengths. Many of the experts interviewed for this report stressed the importance of having a field presence for CPAC, staffed with experts capable of outreach and program support for farmers and ranchers at the local level. To overcome the lack of direct grower outreach and programming capacity, the administering agency will have to rely on existing field offices, like the Resource Conservation Districts, for CPAC implementation, outreach and grower support. Whether the lead agency is DOC or CDFA, both departments as well as the California Air Resources Board (CARB) should be involved in implementation of the program, in consultation with an external advisory committee as described below.

Advisory Committee and Independent Review Panels: Stakeholder experts recommend that an advisory committee guide the development and implementation of the program. The Secretary of Natural Resources, the Secretary of CDFA and the Chair of CARB may select members of the advisory committee, based on nominations from the public. Independent review panels should be formed to make recommendations on proposal selection.

Funding Areas: As recommended, CPAC consists of the following two program areas:

1. Research Program: To fill gaps in our understanding of opportunities in California agriculture to reduce greenhouse gas emissions and sequester carbon, while supporting agricultural resilience and adaptation to the impacts of climate change.

Overwhelmingly, experts consulted for the Blueprint recommended prioritizing basic and applied research funding for projects that improve the ability of growers and technical service providers to develop on-the-ground projects that reduce greenhouse gas emissions.

We recommend that eligible projects be required to include the following:

- Consideration of how proposed changes in farm management affect greenhouse gas emissions and/or carbon sequestration
- Evaluation of the costs, benefits and practical considerations for producers associated with the mitigation practices to be studied
- Outreach and communication activities to disseminate research findings to agriculture and environment communities via webinars, in-person workshops, shared databases, trade and farm journals, etc.

Additional selection criteria may be considered, as described in the full report, with priority given to projects that meet multiple criteria.

2. Farmer and Rancher Program: To provide education and technical assistance that encourage and enable farmers and ranchers to reduce greenhouse gas emissions and sequester carbon, while supporting agricultural resilience and adaptation to the impacts of climate change. A financial incentives component can aid and support individual farmers who sign a contract to voluntarily implement recommended practices.

The Farmer and Rancher Program can provide competitive grants for education and technical assistance projects that reduce greenhouse gas emissions, sequester carbon, and support multiple economic, environmental and health co-benefits. A related crucial objective of the program is to demonstrate the advantages of participating in the funded projects.

We recommend that eligible projects be required to include the following:

- Reduced greenhouse gas emissions and increased carbon sequestration, with priority given to projects that demonstrate climate adaptation benefits
- Co-benefits from the project, including environmental, economic and public health benefits
- Cost-effectiveness of management practices employed
- Farmer or rancher interest in the targeted practices and effective dissemination of project results to grower associations and other farm groups

Incentives: The Farmer and Rancher Program may include the option of financial incentives to aid and support individual producers who sign a contract to implement recommended practices as part of a technical assistance project. Financial incentive contracts may be offered to farmers who agree to implement and maintain the practices for three to ten years. The lead agency could determine, with input from the advisory committee, to renew some contracts where additional support could help meet program objectives.

Measuring Program Performance: It is critical that performance metrics be selected and tracked with the first CPAC grant cycle. The lead agency will establish program performance measurements with guidance from the advisory committee and will build them into the overall program. The lead agency should also look to the privacy practices used by the USDA Natural Resources Conservation Service (NRCS) to ensure farmer confidentiality. The full report includes an overview of available methods for evaluating the effects of agricultural practices on greenhouse gas emissions and carbon sequestration.

Collaboration with the NRCS and the California Association of Resource Conservation Districts (CARCD): To build mutual capacity to carry out these projects, we strongly encourage the lead agency to consider a formal agreement with California NRCS, whose staff has extensive technical knowledge, a foundation of conservation practice standards, and good models for farmer contracts and compliance mechanisms. These kinds of agreements and collaborations between NRCS and state agencies are not uncommon and could improve efficiencies and further innovation. The lead agency may also consider a memorandum of understanding with the California Association of Resource Conservation Districts to assist with program outreach and project results dissemination. Such an MOU would ensure that the program objectives and opportunities are delivered effectively to producers throughout the state.

photo credit: USDA NRCS

About CalCAN

The California Climate and Agriculture Network (CalCAN) is a coalition of the state's leading sustainable agriculture organizations and farmer allies. We came together out of concerns for climate change impacts on California agriculture and to advance sustainable agricultural solutions to a changing climate. Since 2009, we have cultivated farmer leadership to serve as the sustainable agriculture voice on climate change policy in California.

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