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Secretary Karen Ross  
California Department of Food and Agriculture

Board Chair Felicia Marcus  
State Water Resources Control Board

Chairman Mary Nichols  
California Air Resources Board

Director David Bunn  
California Department of Conservation

Secretary Matt Rodriguez  
California Environmental  
Protection Agency

Director Scott Smithline  
CalRecycle

Secretary John Laird  
California Natural Resources Agency

Director Brian Leahy  
California Department of Pesticide Regulation

Director Mark Cowin  
California Department of Water Resources

**RE: RECOMMENDATIONS ON THE HEALTHY SOILS INITIATIVE**

Dear Secretaries Ross, Laird, Rodriquez, Chairs Nichols, Marcus and Directors Bunn, Cowin, Leahy and Smithline,

On behalf of the undersigned agriculture and conservation organizations, we are pleased to submit the following recommendations to California Department of Food and Agriculture (CDFA) and the members of the Governor's interagency collaboration on the [Healthy Soils \(HS\) Initiative](#). The Initiative has the opportunity to help transform California agriculture to reduce potent greenhouse gases (GHGs), improve our carbon sinks and provide multiple co-benefits to farmers, ranchers and our communities.

To date, participating agencies in the Healthy Soils Initiative have identified the following action areas for the Initiative:

- Action 1 – Protect and restore soil organic matter (soil carbon) in soils to ensure climate change mitigation and food and economic security
- Action 2 – Identify sustainable and integrated financing opportunities to facilitate healthy soils
- Action 3 – Research, education and technical support to facilitate healthy soils
- Action 4 – Increase governmental efficiencies to facilitate healthy soils
- Action 5 – Ensure long term interagency coordination and collaboration<sup>1</sup>

Our comments are relevant primarily to Actions 1, 3 and 5. Our recommendations are intended to meet the needs of agricultural producers and transform California farms and ranches from being sources of GHGs to being sinks that safely sequester carbon for many decades.

We offer recommendations in the following areas: (A) Guiding principles to help inform the Healthy Soils Initiative framework; (B) Elements of a successful Initiative; (C) Recommendations for Initiative funded demonstration projects and technical assistance; and (D) Recommendations for farmer/rancher incentives.

#### **(A) Guiding Principles**

We recommend the following guiding principles to inform the development of the Healthy Soils Initiative:

- Support farm and ranch management practices that can increase on-farm carbon sequestration and reduce GHG emissions through a combination of practices, taking a whole farm systems approach aimed at optimizing the full range of climate change solutions of the farm or ranch.
- Ensure that a range of operation sizes and types (annual and perennial crops, pastures and rangeland) are able to access the program, reflecting California agriculture's great diversity.
- Optimize climate benefits while supporting the economic viability of California agriculture.
- Prioritize strategies with environmental, health and resilience co-benefits.
- Build upon existing capacity within CDFA and through collaboration with existing outside entities, including leveraging existing conservation/sustainability programs from USDA Natural Resources Conservation Service (NRCS), Resource Conservation Districts (RCDs), and agricultural nonprofit organizations and trade groups to maximize the reach and impact of the Healthy Soils Initiative.
- Ensure program transparency.
- When a competitive selection process is used ensure that is not onerous and does not put undue burden on producers.
- Integrate input from local growers to inform implementation of the statewide program.
- Include performance outcome and evaluation mechanisms.
- Provide resources for technical service providers, nonprofits, agricultural trade groups and others to support growers with application assistance, project planning, designing, implementing, and

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<sup>1</sup> See: [www.cdca.ca.gov/EnvironmentalStewardship/HealthySoils.html](http://www.cdca.ca.gov/EnvironmentalStewardship/HealthySoils.html)

monitoring. This type of technical assistance and outreach will be critical to reach small and mid-scale producers and beginning farmers with limited resources.

## **(B) Elements of a Successful Healthy Soils Initiative**

### **1. Model the Healthy Soils Initiative on Other Successful Conservation and Sustainability Programs**

There are a number of successful grower outreach and education programs that have inspired changes in on-farm management practices to address environmental concerns. As much as possible, we should learn from past and present programs to avoid reinventing the wheel when it comes to the Healthy Soils Initiative.

The following are successful approaches that CDFA and the interagency group may consider as possible models for grower outreach and technical assistance:

- The Natural Resources Conservation Service [conservation programs](#)
- Biologically Integrated Orchard and Farming Systems Programs ([BIOS and BIFS](#))
- Organic certification (organic system plan, including the [National Organic Program's Natural Resources and Biodiversity Conservation Guidance](#))
- Wine grape programs such as [Lodi Rules](#), the [California Sustainable Winegrowing Alliance's Sustainable Winegrowing Program](#), and the [Vineyard Team's SIP certification](#)
- [USDA SARE](#) (especially the SARE RFP and application process)
- [Carbon Farm Planning](#) (Marin RCD)
- [LandSmart® Program](#) (Northern California RCDs)
- [Almond Board of California's Almond Sustainability Program](#)

All have had improved environmental outcomes. Certain elements of these programs stand out as especially relevant to the Healthy Soils Initiative:

- BIOS and BIFS included a facilitated management team with seats for a farmer, cooperative extension agent, scientist or researcher from a relevant field of study, and a pest control advisor. While the specific stakeholders might change depending on the needs of the project, the inclusion of the facilitator was especially critical.
- Successful programs incorporate a farmer-to-farmer philosophy, putting the site-specific knowledge of the farmer/rancher on an equal footing with the scientific and technical expertise of other participants. Examples include LandSmart and Carbon Farm Plans.
- Many programs took a “whole farm systems” approach, considering how all aspects of farm and ranch management influenced outcomes. Examples include Lodi Rules, Organic System Plans, BIFS/BIOS, LandSmart, Sustainable Winegrowing Program, Carbon Farm Planning, and the Almond Sustainability Program.
- Many of the practices that the Healthy Soils Initiative plans to incentivize—such as cover cropping, reduced tillage, compost application, rotational grazing, hedgerows, windbreaks, riparian areas, woodlands and wetlands—are addressed in organic farming and detailed in the organic system plans required by the National Organic Program (NOP), a voluntary program. Adapting the organic system plan and NOP Natural Resources and Biodiversity Conservation Guidance concepts to a “climate friendly farm system plan” may be a useful approach.

### **2. Active Program Outreach Will Be Important to Program Success**

Ultimately, the impact of the Healthy Soils Initiative will be measured not only in terms of achievements on enrolled acreage, but also on its ability to leverage changes on farms and ranches well beyond those participating in funded programs. Therefore, program outreach should be given special attention.

The economic, agronomic, and local environmental and health co-benefits of Healthy Soils actions—more so than their GHG reduction value—are what will make the program attractive to growers. Additionally, for

many growers, being leaders in their communities in ways that provide stewardship benefits is an important motivator in making changes to their operation. This is not to suggest the GHG emission reductions are not central to the program, but it may not be the primary driver of farmer and rancher participation.

Program outreach should focus on key questions of concern to the grower:

- How will participation in the program improve their bottom line by increasing profits and/or reducing costs?
- How much will it cost them in time and money and what technical and financial assistance will there be to reduce these costs?
- How will these actions improve air and water quality? Will they help to diminish other regulatory concerns?
- How will their community perceive their participation?

The more up-front benefit to the grower, the more enrollment and subsequent spread to additional acreage will be achieved. By pointing to successful ‘early adopters’ of soil building practices, and through demonstration projects that quantify clear co-benefits, Healthy Soils Initiative outreach can make a stronger case for participation.

### **3. Take A Whole Farm System Approach**

Demonstration projects and incentives should support a whole farm system approach to carbon sequestration, GHG reduction, and improving soil health. This entails identifying and evaluating a full suite of GHG reduction and sequestration opportunities on the farm to optimize on-farm GHG reduction and sequestration potentials by providing producers with a range of site-specific opportunities and the information needed to select those practices that will best support overall land management objectives while maximizing GHG benefits. A whole farm system approach may allow for economies of scale and economic and environmental synergies not otherwise realized with single practice implementation.

Research indicates that the integration of multiple GHG-reducing practices on farms and ranches may be more effective at mitigating climate change than changing single, individual agricultural practices. For example, UC Davis research showed that reduced tillage combined with growing cover crops has greater ability to sequester carbon and increase yields than either practice alone.<sup>2</sup> It is the synergistic benefits of combined practices in a whole-farm context that hold the most promise for increased carbon sequestration in soils and reduced GHG emissions in agriculture.

We encourage CDFA and its agency partners to prioritize projects that combine multiple practices and promote the use of integrated farming systems that work across multiple management areas including: water use/irrigation; off-farm inputs; energy use; crop choices and cropping patterns; and biodiversity.

In addition, the Healthy Soils Initiative should incentivize and fund demonstration programs on certified organic and transitioning land. Research suggests that farming systems that rely on biological management practices and limit both direct and indirect fossil fuel inputs may have the greatest potential for sequestering carbon and reducing the overall carbon footprint of agriculture.<sup>3</sup>

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<sup>2</sup> See: <http://www.energy.ca.gov/2008publications/CEC-500-2008-039/CEC-500-2008-039.PDF>

And: Mitchell, J.P. et al. 2015. Tillage and cover cropping affect crop yields and soil carbon in the San Joaquin Valley, California. *Agronomy Journal* 102(2).

<sup>3</sup> Clark, M., et al. 1998. Changes in soil chemical properties resulting from organic and low-input farming practices. *Agronomy Journal* 90, 662-671. And: Horwath, W., et al. 2002. Soil carbon sequestration management effects on nitrogen cycling and availability. *Agricultural Practices and Policies for Carbon Sequestration in Soil*, 155-164.

### **(C) Recommendations on Demonstration Projects and Technical Assistance**

One of the most effective means of communicating agricultural innovations to farmers and ranchers is by demonstrating them in the field. In addition, it is critical that farmers and ranchers receive technical assistance and guidance to reach the highest efficacy of implemented projects and maximize return on state funding. Therefore, we recommend that CDFA develop a program that will fund field demonstrations of climate-smart practices and farming systems that demonstrate their practical applications for the state's farms and ranches and assist farmers and ranchers in wider implementation. Some of these projects could be set up as field studies to generate useful data to inform future incentives.

Successful demonstration projects will include the following elements:

- Demonstrate farm management practices that are proven to reduce GHG emissions and/or enhance soil and woody biomass carbon sequestration. In addition, the Healthy Soils Initiative should incentivize and fund demonstration programs on all farming types (including conventional, organic, organic transition, biodynamic), with the expressed goal of increasing soil carbon matter in California.
- Provide a cost-benefit analysis of the chosen practices that acknowledges co-benefits (e.g. improved plant and animal health, pest control, air, water quality, wildlife habitat, pollinator services, and even improved community relations).
- Disseminate findings, data, and other project information. Outreach should include stakeholders in farming and ranching communities, Cooperative Extension, relevant state agencies, scientists and journalists. The Initiative might support this through the use of online tools, publications, symposia, or on-farm tours and workshops.
- Show promise of being replicable on a broader scale.
- Work with the Environmental Farming Act Science Advisory Panel and other stakeholders to develop program guidelines through a robust public process.
- Select eligible demonstration projects through a competitive Request for Proposals (RFP) process. Eligible entities should include those with a track record of working successfully with agricultural producers on conservation projects. This may include RCDs, UC Cooperative Extension, and agricultural nonprofit and trade organizations. Project applicants should collaborate with experts in the science and practice of GHG reduction, soil carbon sequestration, and climate change adaptation in agriculture. The Western SARE RFP may be a particularly helpful model.
- Develop separate program areas for projects on cropland, dairy and livestock/rangeland to reflect the differences in GHG emissions profiles, farm management issues, and required expertise in each sector.
- Require growers, researchers, and technical assistance providers to work together to demonstrate the viability of various practices. Eligible technical assistance providers should have a track record of successfully working with producers to bring changes in management practices. Local partnerships with RCDs, NRCS, land trusts, UC Cooperative Extension, nonprofits and agricultural trade groups should be encouraged.
- Bring in technical experts on review panels for project proposals. Outside expertise can be tapped, similar to the review processes for the Specialty Crop Block Grant and FREP programs. Technical experts in both cropland and livestock/rangeland management could evaluate proposals submitted to each program area. Outside experts should include those knowledgeable in conservation, biological management practices, and organic farming systems, as well as those familiar with conventional agricultural systems.
- Allocate funds to compensate farmers and ranchers for their participation in planning, hosting field days and gathering data. Matching funds should be encouraged but not required.
- Set targets for geographic distribution of demonstration sites and inclusion of a range of farm scales and production systems, including certified organic and transitional organic land.
- At least 25 percent of the projects should benefit disadvantaged communities as defined in SB 535.

## (D) Recommendations on Incentives

Farmers and ranchers implement land management practices for a variety of purposes, which may include economic, environmental, regulatory and moral reasons. To achieve the widespread implementation of carbon-capturing agricultural practices, well-designed incentives must remove barriers to their adoption. Current barriers include a lack of technical assistance and risks of adoption (i.e. potential decreases in productivity or up-front costs of implementation), among others.

The incentives element of the Healthy Soils Initiative should encourage a permanent shift in the management of working lands towards whole-farm approaches and agricultural practices that reduce and/or capture GHG emissions while increasing sustainability, economic viability and resilience. Incentives should be designed to maintain accountability but allow for flexibility across California's many farming and ranching contexts.

We recommend the following guidelines and objectives for Healthy Soils incentives projects that encourage growers to develop farming systems that reduce GHG emissions and increase carbon sequestration:

- **Environmental Benefits:** Incentives should be designed with the overall goal of encouraging producers to adopt long-term management strategies that increase carbon capture and reduce GHGs. Incentives should also support activities with multiple environmental co-benefits (e.g. water quality, wildlife habitat). The NRCS Conservation Stewardship Program could provide a model for incentivizing long-term stewardship in ways that are appealing to growers.
- **Financial:** Incentives should not be considered strictly financial, but should also encompass training and technical assistance benefits as well as recognition for farmers and ranchers for their excellence in stewardship. Contract lengths and payment levels should be flexible, in order to ensure that a broad spectrum of landowners participate in the program. CDFA should consider supporting the creation of market opportunities for climate-beneficial agricultural products, including through collaborations with other segments of the agricultural industry. On-farm plans or practices that can leverage funding from other sources should be encouraged. Financial support should reflect the operating costs that vary by region and crop.
- **Science and Learning:** The incentives program should wed the best available science and quantification tools with on-the-ground insights and experience to deliver management options that are simple, cost-effective and meaningful to growers. The science and quantification tools used to guide the incentives program should be reviewed periodically and modified as needed.
- **Whole Farm Climate Action Projects:** Where relevant, incentives should focus on the development of whole farm carbon sequestration and GHG emission reduction projects that will inform producers on how they can reduce emissions, increase carbon capture and sequestration and achieve related environmental and economic co-benefits. Action projects will: 1) identify and prioritize practices; 2) calculate GHG/carbon sequestration benefits achieved; and, 3) outline a schedule and logistics for implementation. CDFA may fund the creation and implementation of the whole farm projects, including carbon farm plans as being developed by Marin Carbon Project and several RCDs across the state. CDFA should consider a scoring system that provides additional points for program applicants who seek to take a whole farm approach.
- **Focus groups:** To determine the success and interest among producers to participate in such planning and implementation efforts, we recommend CDFA and Healthy Soils Initiative partner agencies (ARB, DOC, etc.) develop regional focus groups of producers and technical service providers, and/or work with existing NRCS regional work groups, to discuss how best to roll-out Whole Farm Climate Action Projects to accommodate a variety of agricultural land uses.
- **Training:** Working with USDA-NRCS, CDFA and partners should provide training to technical service providers (e.g. Resource Conservation Districts, UC Cooperative Extension, etc.) on the creation and implementation of Whole Farm Climate Action Projects. Training for service providers as well as growers themselves should be considered a key element for the incentive program's success.

- **Outreach:** CDFA should work with partners to develop an outreach program that targets landowners, RCDs, UCCE farm advisors and technical service providers, ensuring widespread awareness and buy-in for the Healthy Soils Initiative. Future outreach should include recognition of farmer and rancher participants for their work to address climate change and provide multiple benefits to their communities.
- **Reach small and medium-scale growers:** The incentives program should be designed to serve a diversity of growers across various regions, cropping systems, crop types, and scale. In order to encourage smaller and underserved growers to apply for incentives programs, CDFA might consider an option that aggregates multiple grower projects into one application so as to minimize transaction costs while maximizing regional GHG benefits.
- **Farm Bill Compliance:** Explore how to coordinate with USDA-NRCS Farm Bill conservation programs, including potentially supporting farmers and ranchers who receive incentive funds to comply with Farm Bill conservation provisions: 1) Highly Erodible Land provision protects lands that are highly erodible, 2) the Wetland provision protects wetlands, and 3) the Sodsaver provision protects grasslands from being converted to cropland.

The Healthy Soils Initiative comes at an important time for California agriculture, when the extremes of drought have stressed our industry. The Initiative has the opportunity to provide resources for agricultural producers interested in innovative conservation efforts that increase soil organic matter, reduce emissions and address the challenges of a changing climate.

Thank for your consideration of our recommendations, and for your leadership in developing this important program. We look forward to working with you to make the Healthy Soils Initiative a model for the country.

Sincerely,

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