CalCAN
California Climate & Agriculture Network

February 28, 2014

Ann C. Chan
Deputy Secretary for Climate Change and Energy
California Department of Natural Resources
1416 Ninth Street, Suite 1311
Sacramento, CA 95814

Dear Deputy Secretary Chan,

Thank you for the opportunity to review the public draft of the new Safeguarding California: Reducing Climate Risk update to the 2009 California Climate Adaptation Strategy. The California Climate and Agriculture Network (CalCAN) is pleased to submit the following comments for your consideration.

CalCAN is a coalition of sustainable agriculture and farmer member organizations, working together on the nexus of climate change and agriculture issues. As such, we have focused most of our comments on the Agriculture sector chapter of the report, but we feel many of our recommendations are also relevant for other sectors and cross-sectoral priorities.

Where feasible, we have offered specific language suggestions. In each instance, we introduce these suggestions with an italicized recommendation for where the language might be inserted or modified. All language suggestions are contained within text boxes for ease of reference.

Overall Comments on the Report:

In its current form, the draft Plan is an impressive update to the 2009 report, full of references to the latest research and valuable strategies for adaptation in California. Cross-sectoral linkages are well-identified and thoroughly explained. The 'call-out' boxes featuring stakeholder stories and testimonials offer additional substance and urgency. The Plan's references and recommendations are vitally important to making the case for smart adaptation policy.

Policymakers constantly function with a dearth of resources and a plethora of potential actions to take in addressing the State's challenges. Californians have a strong stake is seeing that this report does not simply add to the list of potential adaptation actions policymakers might consider; its greatest contribution should be clear policy guidance, based on an established set of principles and goals, that policymakers can use when deciding what adaptation options to pursue.

The following suggestions address the overall structure and intent of the Safeguarding California plan (SCP), across all sectors.

1. Adopt clear goals and principles

A set of 'Goals and Principles', placed near the start of the document, would greatly strengthen the plan. These should clearly state how this plan might provide guidance in the context of California's urgent climate adaptation needs. A singular compilation of goals and principles for adaptation planning would help to further highlight and clarify some valuable insights found throughout the report.

To that end, we strongly support the November 1, 2013 submission to the Natural Resources Agency by The Nature Conservancy and a group of fourteen other organizations, which recommends that the plan adopt a set of "Core Goals" and "Climate-Smart Principles".[1] These goals and principles apply across multiple sectors and offer forward-thinking approaches to adaptation policy. They also reinforce and articulate the intent of the report in a very complementary way.

We suggest including these Core Goals and Climate-Smart Principles directly before the "Cross-Sectoral Strategies" on page 7 of the current report. Their inclusion would bolster the policy relevance of the powerful analysis that follows by rooting it in a unified approach.

2. Include 'priority recommendations' for each sector.

The draft report includes important actions for climate resiliency across all sectors. However, without some guidance as to what is most urgent and feasible, it will be difficult for policymakers to transform these recommended actions into successful actions and programs.

When prioritizing Strategies and Actions in the plan's Agriculture section, we strongly recommend that technical and financial assistance take precedence over research projects. While there is still some important research to be done, we already know a lot about farmers' needs as compared to adaptation needs in other sectors. CDFA's Climate Change Consortium for Specialty Crops report was developed by a broad range of agricultural stakeholders, who pointed to a multitude of proven adaptation strategies that need better on-the-ground support to become reality.[2] The Consortium specifically recommends renewed investment in grower technical assistance and trainings.[3]

Public investment in agricultural technical assistance has declined substantially in the past two decades, particularly at institutions like UC Cooperative Extension and Resource Conservation

[1] "Comments on the Safeguarding California Plan: an update to the 2009 State Climate Change Adaptation Strategy." Submitted by The Nature Conservancy, Defenders of Wildlife, Pacific Forest Trust, Point Blue Conservation Science, Environmental Defense Fund, Audubon California, Save the Bay, Greenbelt Alliance, Climate Resolve, the California Native Plan Society, the Big Sure Land Trust, the Pacific Institute, Peninsula Open Space Trust, California Resources Conservation Districts, and Bolsa Chica Land Trust.
[2] Consortium report available online at: http://www.cdfa.ca.gov/environmentalstewardship/pdfs/ccc-report.pdf
[3] See Consortium report, p. 4.

Districts, whose staff is best suited to provide adaptation support to the farmers who need it most.[4] Rather than prioritizing more research, we believe it is long past time for the State to invest more in outreach and assistance to farmers on adaptation and climate change issues.

*At the conclusion of the Plan's Introduction, we suggest including a new heading, '**Priority Recommended Actions by Sector**,' which summarizes the most urgent and important needs drawn from each chapter's 'Actions Needed' section. Here are our recommendations for Priority Recommended Actions in the Agriculture Sector:*

- **Increase levels of technical assistance, outreach and education to boost knowledge and preparedness for facing climate risks.**

  Information regarding research, best practices, and opportunities to protect agricultural resources from climate risks must be shared with farmers and ranchers in a format that is easily accessible and readily usable to promote timely action. Outreach and assistance efforts should be led by entities with pre-existing field experience, such as USDA Natural Resources Conservation Service, University of California Cooperative Extension, Resource Conservation Districts, and nonprofit organizations.

- **Develop and promote adoption of management strategies that reduce climate risks to agriculture.**

  Sustainable, science-based management strategies with multiple benefits, such as promoting biodiversity for pollinator health, soil conservation practices, farmland preservation, agricultural water/energy use efficiency, and rangeland management should be prioritized. Demonstration projects and on-farm field trials can further our collective understanding of the adaptation benefits of a diversity of cropping and livestock systems and related practices, including organic, resource-conserving crop rotations, managed grazing and soil-building management practices.

- **Research and monitor the cumulative impacts of climate change on agriculture against the backdrop of other stressors.**

  Evaluations of climate risks to agriculture must consider the impacts of other relevant stressors, and in particular farmland conversion. More research is needed to understand the compound and cumulative impacts of these risks to develop more accurate projections to inform risk management strategies.

3. Increase synergy with existing priorities, goals, plans, and efforts.

[4] See Section 4.2 of CalCAN's 2011 report, *Ready…Or Not? An Assessment of California Agriculture's Readiness for Climate Change*. Available online at: http://calclimateag.org/our-work/ready-or-not/

We recommend including stronger and more consistent linkages between the SCP and the myriad other plans and goal-setting documents that have been produced by other agencies and the Governor's Office. We understand that a chapter demonstrating synergies across the various State plans and documents is in the works, and look forward to seeing that this is prominently featured in the final Safeguarding California document. Demonstrating the SCP's synergies with multiple other State priorities can bolster the case that climate change adaptation is a 'win-win' across sectors, and that *all* policies and programs should do a better job taking the SCP's recommendations into account.

A few additional in-line references to other plans and efforts would also help drive this point home. For example, in the Agriculture section, the report may emphasize that many of the recommended actions for promoting adoption of management strategies and improving outreach and education are consistent with the findings of CDFA's Climate Change Adaptation Consortium on Specialty Crops. Additionally, management actions related to farmland conversion are in alignment with the recommendations of the OPR's draft Environmental Goals and Policy Report, 'California @ 50 Million: California's Climate Future'.

Cite pages 42-43 of the Consortium report on pages 30 and 32 of the SCP when discussing adoption of management strategies. Cite page 20 of the draft EGPR when discussing farmland conversion.

The recommended water management strategies to reduce climate risks to agriculture align nicely with some of the recommendations in the DWR's California Water Plan. Finally, many of the adaptation strategies in agriculture, as described in the SCP, can also provide climate change mitigation benefits and help meet the objectives of AB 32, as described in the latest Scoping Plan Update from the CARB.[5]

Comments on the Agriculture Section of the Report:

1. **Focus on agricultural *systems* for adaptation, rather than just discrete management actions.**

The SCP includes a list of agricultural risk management strategies (Box 5, p. 17), and a recommended strategy is "Developing and promoting adoption of management strategies that reduce climate risks to agriculture" (p. 30). The focus is on encouraging individual farm management choices to address individual climate threats; for example, groundwater management to address increased drought severity, or housing/shading livestock to prepare for heat stress.

Siloing adaptive actions into various management 'areas' within a farm operation in this way ignores complex interconnections between the various elements of biological systems — of which agriculture is one. The SCP's recommendations should instead focus on developing

[5] Draft Scoping Plan Update accessible online at: http://www.arb.ca.gov/cc/scopingplan/document/updatedscopingplan2013.htm

agricultural management *systems* that are resilient across-the-board, recognizing the uncertain future we face. Below we describe how this systems approach may be incorporated in the agriculture section of the report.

A. Support biologically-diverse, sustainable farming systems for their adaptation advantages.

In particular, the SCP should recommend policies that support **biologically-diverse, sustainable farming systems** as a strategy for increased resilience. These systems incorporate soil health, crop diversification, water use efficiency, resource conservation, wildlife and pollinator habitat, and many other 'adaptive behaviors' into normal functioning instead of treating them as separate management strategies to take up individually. Biologically-diverse farming systems are recognized for their increased resilience to the types of losses that may be brought on by climate change and associated weather extremes.[6] The 2009 Adaptation Strategy supports near-term actions to adopt sustainable agriculture policies[7]; the update should carry forward and expand upon this.

B. Conservation Plans can yield long-term adaptive behavior rather than just temporary adjustments.

Agricultural adaptation to climate change happens at multiple temporal scales. '*Tactical*' adjustments, which only have short-term resiliency benefits and impact only the present year's crop production, are distinct from '*Strategic*' adaptations, which have longer-term benefits and constitute a more proactive approach to a changing climate.[8]

Farm plans that incorporate energy, water and natural resource conservation can bring together the two approaches to adaptation – longer-term Strategic planning and short-term Tactical approaches. The success of John Diener's innovative approach to water use management (SCP p. 15-16), for example, can be partly attributed to his purposive use of Water Stewardship principles in his planning processes – a strategic approach to meet his long-term resilience needs.

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[6] A sample of the relevant literature on this subject includes: Smukler, S.M., L.E. Jackson, L. Murphree, R. Yokota, S.T. Koike, and R.F. Smith. 2008. Transition to large-scale organic vegetable production in the Salinas Valley, California. Agriculture, Ecosystems and Environment 126:168- 188; Wall, Ellen, and Barry Smit. 2005. "Climate Change Adaptation in Light of Sustainable Agriculture." Journal of Sustainable Agriculture 27(1): 113-123; De Schutter, Olivier. 2010. "Report submitted by the Special Rapporteur on the right to food, Olivier De Schutter." United Nations General Assembly Human Rights Council: Sixteenth session 20 Dec. 2010: 21 pp.; Jackson, L. E., F. Santos-Martin, A.D. Hollander, W.R. Horwath, R.E. Howitt, J.B. Kramer, A.T. O'Geen, B.S. Orlove, J.W. Six, S.K. Sokolow, D.A. Sumner, T.P. Tomich, and S.M. Wheeler. 2009. Potential for adaptation to climate change in an agricultural landscape in the Central Valley of California. California Energy Commission CEC- 500-2009-044-F; and Borron, S. 2006. Building resilience for an unpredictable future: how organic agriculture can help farmers adapt to climate change. Food and Agriculture Organization. Available at: ftp://ftp.fao.org/docrep/fao/009/ah617e/ah617e.pdf. See also CalCAN's Fact Sheet: http://calclimateag.org/wp-content/uploads/2011/04/Organic-Climate-Benefits-fact-sheet.pdf

[7] See p. 103 of the final 2009 Adaptation Strategy.

[8] For a discussion of 'tactical' versus 'strategic' adaptations, see: Smit, Barry, and Mark W. Skinner. 2002. "Adaptation Options in Agriculture to Climate Change: A Typology." *Mitigation and Adaptation Strategies for Global Change* 7:85-114.

The SCP should prioritize Farm Adaptation *plans* that provide a strategic framework for long term energy, water and natural resource conservation, rather than prioritizing individual tactics, and recommend ways for farmers to access the invaluable planning tools that have been developed in each of these areas. Conservation planning in agriculture already exists and has been used extensively; what still lacks is adequate technical and financial outreach to farmers who are interested in using planning tools to support their own long-term resilience.

The Climate Change Consortium for Specialty Crops recommends Resource Conservation Districts (RCDs), UC Cooperative Extension (UCCE), and USDA Natural Resource Conservation Service (NRCS) as important partners in incentivizing and scaling these types of planning and technical assistance resources. As we discuss in our *Ready…Or Not?* report, all three of these institutions have seen significant reductions in their field capacity and funding in recent years: RCDs lost most Department of Conservation support in 2003; UCCE has reduced the number of on-farm advisers by 40% since the early 1990s; and NRCS has decreased its staff and reduced specialists' hours in the field.[9]

We suggest including the following language on page 21, following the second-to-last paragraph before Box 7 (to precede "Adequate preparation for climate…"):

> Adaptive adjustments to existing farm and ranch management practices should not be seen only as separate actions that individually address climate threats, but rather should be considered as integrated management choices to increase overall resilience. For example, research has shown that biologically-diverse, sustainable farming systems can provide adaptive advantages across a variety of management areas (e.g. water, soil, energy use) (*see references at footnote 6*), thereby increasing resilience to climate impacts that interact across management areas. Conservation planning tools that seek to improve water and energy use efficiency and enhance natural resource conservation while supporting a viable agricultural enterprise can provide similar benefits by planning for the long-term management of farm resources.

On page 30, under the modified heading "Developing and promoting adoption of management strategies **and systems** *that reduce climate risks to agriculture", we suggest adding the following action:*

- Providing grower technical assistance and financial incentives for the development of biologically-diverse, sustainable farming systems, which are recognized for their increased resilience in the face of a changing climate.

[9] See Section 4.2 of CalCAN's 2011 report, *Ready…Or Not? An Assessment of California Agriculture's Readiness for Climate Change*. Available online at: http://calclimateag.org/our-work/ready-or-not/

On page 28, at the conclusion of the section, "Highlights of Steps Taken to Date and Success Stories", we suggest adding the following section:

Resource Management Planning Assistance for Adaptation
Several existing programs offer resource management planning assistance to farmers, resulting in longer-term adaptive strategies. For example:

- Multiple Resource Conservation Districts operate ***Mobile Irrigation/Water Labs***, which perform on-farm water use evaluations and promote efficient practices and planning.
- The Department of Conservation's ***Watershed Program***, which is currently funded with diminishing CalFed bond allocations, supports natural resource conservation projects within targeted watersheds in the state. A revitalized *Watershed Program* could support projects that include conservation planning and technical assistance for farming operations to identify activities that increase resilience while reducing GHG emissions and sequestering carbon.
- The DoC also has a ***RCD Technical Assistance*** program that offers technical and financial assistance to RCDs to support their proven track record of conservation planning work with local landowners. Funding for this program could expand on-farm water stewardship activities and related farm-level conservation planning initiatives for long-term adaptive management.

2. On-farm renewable energy production is an important tool for rural self-sufficiency and resiliency.

Hundreds of California farms have already discovered the economic benefits of various forms of on-farm energy production, including solar, wind, and bio-energy. Their renewable energy installations will not only safeguard them from future energy cost spikes, but it will also afford them a measure of self-sufficiency if the electric grid falters (as discussed in the SCP's Energy section). In addition to increased self-sufficiency and resiliency for individual farms, on-farm renewable energy provides the 'double-win' of GHG reduction benefits.

The SCP should highlight the need for a policy and regulatory environment that supports on-farm renewable energy production. The Net Energy Metering (NEM) program has provided a fairly straightforward and accessible way for agricultural energy producers to access the grid, but its future is uncertain since the passage of AB 327 in 2013. Financial assistance programs such as the Self-Generation Incentive Program (SGIP)[10] have helped make the economic case for costly non-solar installations, and it is crucial that the state continue to support these efforts.

[10] http://www.cpuc.ca.gov/PUC/energy/DistGen/sgip/

We suggest including the following sub-heading on page 31, following the sub-heading entitled 'Supporting new revenue streams…':

> **Promoting policies that reduce risks associated with rising energy costs and grid instability**
> Rising energy costs and threats to electricity infrastructure that are associated with climate change pose serious risks to agricultural operations. Increased access to on-farm renewable energy production can provide a measure of self-sufficiency and resilience, in addition to GHG mitigation benefits. Policies and programs that help to maintain and expand simplified, easy to access programs for diversified, distributed renewable energy projects can help to address these energy-related risks.

3. Outreach and research efforts should serve farmers' adaptation needs across a diversity of farm sizes. UCCE and RCDs are well-suited to accomplish this.

Many California farms and ranches, particularly those at or below the state average size of 328 acres, often lack the dedicated employee resources they need to be proactive in the face of climate change and environmental concerns. As a result, their 'adaptive capacity' is likely much lower than that of their larger farm counterparts.

We see no reference in the draft report to the issue of farm size in safeguarding California agriculture. Given that the vast majority of farms (by number) are smaller and less-resourced, we recommend that any projects or programs intended to foster adaptation in California's agriculture sector be designed to explicitly acknowledge this diversity in farm sizes and the related discrepancies in resources. Small- to medium-scale farms' access should be considered in the project evaluation process for any proposed adaptation research or outreach initiatives.

Furthermore, University of California Cooperative Extension (UCCE) and Resource Conservation District (RCD) staff members are by far the best suited to offer adaptation outreach and assistance to this target population. Farmers trust and have pre-existing relationships with them, easing the difficult adaptation decision-making process. Unfortunately, both UCCE and RCDs have seen significant budget cuts in recent years. The SCP should recommend increased support for these important institutions as an adaptation priority for the agriculture sector, since support programs are only as effective as their delivery to the target audience.

We suggest including the following heading on page 21, directly before the heading 'Risk Management Strategies':

> Farm Size and Resources for Adaptation
> Many California farms and ranches often lack the dedicated employee resources they need to be proactive in the face of climate change and environmental concerns. As a result, their 'adaptive capacity' is likely much lower than that of larger operations that may have dedicated environmental/sustainability management employees with technical expertise. All agricultural adaptation efforts should be designed to acknowledge the state's incredible diversity of farm sizes and the related discrepancies in resources. Efforts should include targeted outreach to those operations with the least ability to independently seek assistance, and should utilize the relationships already established by UC Cooperative Extension, Resource Conservation District and non-profit programs.

4. The California Farmland Conservancy Program and other programs that support conservation easements are additional successes to include under 'Protecting Agricultural Land' (p. 26-7).

The report correctly highlights the multiple climate change adaptation and mitigation benefits of protecting agricultural land. However, the draft report does not mention agricultural land conservation easements as a strategy for permanent protection of farmland. An agricultural land conservation easement is a voluntary, legally recorded deed restriction that is widely accepted as a powerful tool for reducing development pressures on farmland. In listing "Steps Taken to Date and Success Stories" (p. 26-27), SCP should highlight the State's programs that use agricultural land conservation easements as a tool to slow the loss and conversion of valuable farmland.

We suggest including the following language in the middle of page 27, following the paragraph that ends, "…due to revenue shortfalls.":

> **The California Farmland Conservancy Program (CFCP)**, a grant-funding program run by the Department of Conservation, has successfully conserved over 56,000 acres of California farmland since 1996. The CFCP provides grants to local governments and qualified non-profit organizations. These grants support local efforts and planning projects that protect agricultural land resources. The **Wildlife Conservation Board's Rangeland, Grazing Land and Grassland Protection Program** has similarly supported conservation easements intended to prevent rangeland conversion, protect livestock grazing, and sustain the related water quality and open-space benefits of grazing practices. However, public funding for agricultural land conservation easements and related planning projects has largely dried up in recent years, and these programs would benefit from renewed support for this important solution to the problem of farmland conversion.

(**NOTE**: We are aware that some funds for farmland conservation easements have become available for mitigation of high-speed rail development; needless to say, the planning and easements supported by this project will be extremely limited in scope and will not address the statewide loss of farmland in any notable sense.)

5. Narrow research focus to address gaps, especially in the areas of resource protection for adaptation and the impacts of cumulative farmland loss.

As mentioned above, we believe that publicly-funded support for agricultural adaptation should shift more to technical and financial assistance, given the urgency of on-the-ground adaptation needs. Concurrent with this shift should be the prioritization of key research needs in this area. The draft SCP identifies sixteen different priority areas for agricultural research, modeling and monitoring.[11] In the near-term, we recommend only prioritizing research that is intended to produce on-the-ground adaptive strategies, such as "Studies of the effectiveness of different cropping practices…" and "crop-specific and location-specific…modeling projections of productivity effects and impacts to help facilitate the development of specific, actionable management activities…".

One important research topic that should be more strongly featured in the current SCP list of priorities is the cumulative impacts of farmland loss in the state from development. There is little understanding of the cumulative impacts of farmland loss to both old and new forms of development, including potential impacts on the agriculture sector's ability to adapt to climate change, provide adequate food resources in the long term, and support rural communities. The Governor's draft Environmental Goals and Policy Report[12], the ARB Scoping Plan Update[13] and the Cap and Trade Investment Plan[14] highlight farmland preservation as an important adaptation and mitigation priority, and a more refined research strategy on the impacts of farmland loss will contribute to these efforts.

On page 29, we suggest modifying the first bullet point (starting,"Cumulative impact studies") to read:

> Cumulative impact studies: As discussed in this chapter, agriculture faces multiple changing climate variables and multiple climate risks. These threats occur against the backdrop of other stressors, and particularly farmland conversion. More research is needed to understand the compound and cumulative impacts of these risks to develop more accurate projections to inform risk management strategies. In particular, research should clarify the cumulative impacts of farmland conversion on adaptive capacity, food security, and rural livelihoods.

[11] p. 28-29.
[12] Available online at: http://opr.ca.gov/s_egpr.php
[13] Available online at: http://www.arb.ca.gov/cc/scopingplan/scopingplan.htm
[14] Available online at: http://www.arb.ca.gov/cc/capandtrade/auctionproceeds/auctionproceeds.htm

Conclusions

We hope you will find our comments useful as you prepare the next draft of the Safeguarding California Plan and guide its dissemination to stakeholders and decision-makers. Here again are our major recommendations, summarized:

- Adopt clear goals, principles, and objectives;
- Include 'priority recommendations' by sector;
- Reference other existing plans, goals, and efforts;
- Highlight the adaptation benefits of planning and management of farm *systems* and system planning, especially for biologically-diverse, sustainable agriculture, rather than individual management practices;
- Recognize the adaptation benefits of on-farm renewable energy;
- Facilitate programs that reach farm operations of all sizes;
- Include conservation easements as an important strategy to protect farm- and rangeland; and
- Shift focus from research to technical and financial assistance in the agriculture sector**.**

If we can provide additional documentation, or if you have any questions, please feel free to contact us.

Sincerely,

Jeanne Merrill
Policy Director
jmerrill@calclimateag.org

Adam Kotin
Policy Associate
adam@calclimateag.org