CalCAN
California Climate & Agriculture Network

September 1, 2015

Shelby Livingston
Climate Investments Branch Chief
California Air Resources Board
1001 I Street
Sacramento, CA 95812

Re: CalCAN Comments on Draft Concept Paper for the Second Investment Plan

Dear Ms. Livingston,

On behalf of the California Climate & Agriculture Network (CalCAN)[1] and our member groups, including California Certified Organic Farmers (CCOF), Community Alliance with Family Farmers (CAFF), Ecological Farming Association (EFA), Occidental Arts & Ecology Center (OAEC), and Center for Food Safety (CFS), we are pleased to provide the following comments regarding CARB's draft ***Concept Paper for the Cap-and-Trade Auction Proceeds Second Investment Plan*** ("Concept Paper")**.**

California's agricultural landscapes, which cover nearly a third of the state's landmass, hold tremendous potential for carbon sequestration, greenhouse gas reduction, and avoidance of future emissions. At the same time, improved management of these landscapes can produce significant co-benefits, most notably in the form of greater climate change resiliency and improved air and water quality.

Our overarching interest is to ensure that sustainable and organic agricultural solutions to climate change are sufficiently encompassed in the next 3-year Investment Plan. As the Concept Paper notes, Governor Brown has emphasized the role of carbon storage on farms and rangelands in his 2030 climate and energy goals for the state. The challenges to achieving this vision cannot be overcome without robust investments that demonstrate how farmers, ranchers, and landowners can benefit from implementing climate-friendly agricultural practices and farmland protection.

CalCAN's comments are also aligned with the principles submitted under separate cover by the Natural and Working Lands Coalition, of which CalCAN is a member.

[1] More information about CalCAN is at: http://www.calclimateag.org.

Our recommendations, including suggested edits to the Concept Paper, are below. An Appendix at the end of this document lists all of our suggested edits to the text of the Concept Paper.

1. **Include agricultural management techniques that reduce GHGs as well as those that increase carbon sequestration.**

We are pleased to note the improved breadth and scope of agricultural investments laid out in the draft. It is encouraging to see agricultural strategies mentioned across all three Investment Concept Areas (Transportation & Sustainable Communities; Clean Energy & Energy Efficiency; and Natural Resources & Waste Diversion). This is also a testament to the diversity of opportunities in the sector.

The Concept Paper is a complement to the *First Update to the Climate Change Scoping Plan* (2014), which recognizes the potential contributions of improved soil management practices, land use planning, and organic farming systems to reducing greenhouse gases (GHGs) from the agricultural sector.[2] But the draft Concept Paper, though it places a heavy emphasis on carbon sequestration strategies in agriculture and farmland conservation, does not include the depth and breadth of agricultural management strategies for achieving GHG reductions as was described in the Scoping Plan update, including organic farm management, fertilizer management strategies, etc. Below we make suggestions on how to bring the two documents more closely aligned to better reflect the opportunities in agriculture to achieve real and transformative GHG emission reductions.

While the new focus on carbon-sequestering practices is very welcome, it is also crucial to invest in practices that reduce existing sources of GHGs from the sector. As noted in a CEC PIER-funded study[3], strategies for reducing nitrous oxide emissions in agriculture can produce permanent GHG emissions reductions, which should not be overlooked. Integrated management practices that reduce the use of synthetic fertilizers can produce real emissions reductions along with environmental co-benefits – along with, in some cases, the potential for carbon sequestration.

Investing in a broader range of GHG-reducing soil management practices that improve fertility or have other agronomic benefits will help to create transformative and lasting change in the management of California's agricultural systems. Growers

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[2] See the *First Update to the Climate Change Scoping Plan: Building on the Framework* (2014), pp. 59-60

[3] Assessment of Greenhouse Gas Mitigation in California Agricultural Soils. CEC-PIER Project Report CEC-500-2008-039. http://www.energy.ca.gov/2008publications/CEC-500-2008-039/CEC-500-2008-039.PDF

will need to be able to choose from a suite of practices that can be suited to their operations, and that have clear benefits beyond just carbon sequestration.

Finally, we suggest that the language used throughout the document make it clear that not all solutions are *Technologies* – in the agricultural sector in particular, there are 'low-tech' solutions in the form of improved management *practices* and *strategies* that can often be achieved for a fraction of the cost and produce greater co-benefits.

Suggested Edits:

On page 5, we suggest modifying sub-heading C. to be more consistent with its descriptor paragraph, which twice references "technologies *and strategies*", as well as the more neutral "approaches". It should instead read:

> C. Innovative Technologies **and Strategies**.

On page 20 in the final paragraph, we suggest modifying the second sentence to instead read:

> For example, the use of compost in land applications, **along with other low-input and organic farming systems**, can result in healthy soils and greenhouse gas benefits due to increased carbon storage on the land, soil stabilization which reduces erosion, water conservation, and increased soil health.

On page 20, after the paragraph that ends, "…restoration of forested lands, wetlands, and other natural areas," we suggest adding the following:

> **Improved agricultural management practices have the potential to reduce GHGs as well as store carbon. For example, the use of cover crops and conservation tillage can reduce emissions from soil disturbance, lower reliance on carbon-intensive synthetic fertilizers, and cut emissions from farm equipment. Agroforestry practices such as hedgerow planting and riparian forest buffer establishment sequester carbon in woody biomass and provide multiple co-benefits to agricultural systems. Organically-managed farming systems have been shown to increase carbon sequestration as much as nearly 40 percent.[4] Projects should be designed to demonstrate the value of improved agricultural management practices to growers.**

[4] 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.

On page 17, in the "Energy Efficiency and Renewable Energy" box, we suggest clarifying that energy efficiency and renewable energy projects are also needed on agricultural operations by modifying the first bullet point to instead read:

- Energy efficiency and renewable energy projects for residential, commercial, **agricultural,** industrial, and public buildings **and operations**.

2. **Ensure that 'Systems Approach' and 'Integrated Projects' themes are applied to agricultural investments.**

The overarching themes of taking a 'Systems Approach' and pursuing 'Integrated Projects' (page 5) are important guiding principles for these investments. These approaches can help find synergies across sectors and maximize the GHG benefits of limited investments.

Importantly, these approaches can also help to prevent possible adverse impacts as well as achieve maximum co-benefits by keeping any eye towards the bigger picture instead of pursuing strategies in isolation.

These principles could be pursued at a more granular level at the farm or ranch level itself, for example by incentivizing soil management practices that simultaneously sequester carbon, increase fertility, improve water-holding capacity, and reduce tractor passes. To achieve all of these benefits simultaneously, incentives will need to be structured in a way that integrates practices into a broader planning framework, rather than as one-off, isolated actions. In this same vein, research suggests that management practices used in combination with one another can produce the greatest reductions. For example, in a 12-year study in California, researchers observed a 36% increase in carbon sequestration when using cover crops combined with animal manure applications.[5]

An 'integrated' 'systems approach' should also be a part of agricultural lands conservation strategies. Land easement investments should be designed to work in tandem with urban-focused sustainable communities strategies to reduce sprawl and encourage infill development. Integrating these investments for maximum impact, in the form of the Affordable Housing and Sustainable Communities (AHSC) and Sustainable Agricultural Lands Conservation (SALC) programs, should be a priority action to be pursued in the next 3-year investment plan.

Suggested Edits:

[5] Horwath et al. 2002.

On page 11, we suggest adding the following sentence in the third paragraph, after the words "…are at risk of conversion to more carbon-intensive uses":

> **These efforts should be implemented in complementary ways to produce maximum benefit; for example, agricultural land preservation projects should be strategically located to support infill development and reduce sprawl.**

3. **Recognize and value the full benefits of agricultural lands conservation.**

As mentioned above, it is encouraging to see a strong focus on agricultural land conservation strategies. At present, however, the full benefits of these actions are not being fully quantified and recognized.

For example, while the Concept Paper clearly values agricultural land conservation for its carbon sequestration potential, the current methodologies used to quantify emissions reductions from Sustainable Agricultural Lands Conservation Program investments do not even consider carbon sequestration as a relevant variable.

At the same time, the Concept Paper (and SALC) should adequately recognize and quantify the emissions benefits of avoided conversion to more carbon-intensive uses. Currently only reduced Vehicle Miles Travelled are calculated when assessing the GHG emission reductions associated with permanent protection of agricultural lands at risk of development.

Moving forward, we encourage a more comprehensive approach to evaluating and quantifying the multiple types of benefits from agricultural land conservation, which include reduced VMTs, avoided emissions from keeping land in farms versus more carbon-intensive urban uses, as well as carbon sequestration. The investment plan is a great place to start laying out a vision for how these benefits can be more fully valued and quantified as part of a comprehensive, integrated approach that bridges multiple sectors and land use types.

To facilitate robust participation from agricultural stakeholders in cap-and-trade programs, we also encourage simplified approaches and tools for quantifying the benefits of agricultural projects. For example, farmer applicants had difficulty applying for funds in the first round of the State Water Enhancement and Efficiency Program (SWEEP) at the Department of Food and Agriculture due to the complexity of quantifying their emissions reductions. Certain types of eligible water-conserving projects were essentially unable to apply due to the lack of quantification tools.

The sheer number of projects that will need to be incentivized in the agricultural sector means there will have to be particular effort taken to make sure that the programs are accessible.

It is worth noting that agricultural offset protocols have been largely unsuccessful in California due to the high costs and effort needed to quantify emissions reductions; programs funded through the cap-and-trade auction proceeds should take a different approach. Developing calculators and tools for quantifying reductions will be a crucial part of the success of these efforts, and the implementing agencies should bear most of the responsibility for quantifying a project's GHG reductions.

Suggested Edits:

On page 12, in the box titled, "Sustainable Communities", we suggest adding "**land trusts**" to the list of 'Potential Recipients'.

On page 13, under the 'Co-Benefits' section, we suggest adding the following:

> **Agricultural land conservation can provide food security, as well as economic benefits to rural communities by preserving jobs in the agriculture sector.**

On page 18, we suggest editing the final sentence of the first paragraph under the heading '*1. Existing Situation*' to instead read:

> In addition, forest and agricultural land investments can **avoid emissions by** prevent**ing** conversion ~~**of**~~ **to more carbon-intensive** land types ~~**to**~~ **and** ensure maximum carbon sequestration.

4. **Include pasture-based and dry manure management strategies that can quantifiably reduce emissions across contexts.**

The draft Concept Paper correctly recognizes the importance of reducing emissions from the dairy and livestock sectors. While the focus seems to be on dairy digester technologies, it also mentions dry scrape manure management systems and solid separation as viable options. On-farm composting of manure, which is particularly compatible with dry scrape systems and can produce multiple co-benefits[6], should also be considered. There is no 'one-size-fits-all' solution for reducing dairy and livestock emissions in California; cap-and-trade investments should seek to incentivize reductions across contexts.

This need for multiple emissions-reducing options that work across contexts should be consistently referred to throughout the Investment Plan. We also suggest that pasture-based livestock management practices be included as an option for reducing emissions in some circumstances. Grazing-based systems can greatly

[6] Sustainable Conservation. Greenhouse Gas Mitigation Strategies for California Dairies. July 2015. p. 60-61. Online at: http://www.suscon.org/blog/2015/07/combating-climate-change-dairies-key-in-reducing-methane/

reduce or eliminate the need for methane-generating anaerobic lagoons,[7] while properly managed grasslands and rangelands can act as a significant carbon sink.[8] Projects to demonstrate how confinement dairies may deploy pasture-based management should be considered. Such projects may explore the issues of such a transition, including the economics, conversion to pasture/land access issues, as well as the GHG reduction benefits.

Suggested Edits:

On page 20, at the end of the paragraph that begins, "Traditional methods of managing livestock manure…", we suggest adding the sentence:

> **Pasture-based livestock management practices that reduce emissions and promote soil carbon sequestration should be demonstrated and promoted where feasible and appropriate.**

On page 23, in the paragraph that begins "Restoring the State's forests to more natural carbon stock levels…", we suggest editing the fourth sentence to instead read:

> The diversion of manure to digesters **and conversion to dry manure management systems** can reduce air and water impacts related to open manure lagoons and help better manage nitrogen associated with animal wastes.

5. **Investments in farmland need to be much more robust.**

California is the largest and most significant agricultural state in the country, and yet we are losing 50,000 acres of agricultural land each year. This crisis highlights that our agricultural land preservation efforts cannot survive on minimal funding. The token amount of funds designated for the SALC program in FY 2014-15 is, simply put, insufficient. The Investment Plan rightfully sings the praises of agricultural lands conservation efforts, but these words are worth very little unless backed up by sufficient investment. We strongly urge that the Investment Plan acknowledge the current dearth of funding for the SALC program and recommend much higher levels of investment in what is clearly an integral strategy for achieving the state's long-term climate change goals.

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[7] Steinfeld, Henning, Pierre Gerber, Tom Wassenaar, Vincent Castel, Mauricio Rosales, Cees de Haan. 2006. Livestock's Long Shadow: environmental issues and options. Rome: FAO, 97.

[8] DeLonge, Marcia, Justine J. Owen, and Whendee Silver. 2014. Greenhouse Gas Mitigation Opportunities in California Agriculture: Review of California Rangeland Emissions and Mitigation Potential. NI GGMOCA R 4. Durham, NC: Duke University, 12.; S. Itzkan, The Potential of Restorative Grazing to Mitigate Global Warming by Increasing Carbon Capture on Grasslands (2014), 7.; Gerber, P.J., et al. 2013. Tackling climate change through livestock – A global assessment of emissions and mitigation opportunities. Food and Agriculture Organization of the United Nations (FAO), Rome, 53.

As discussed above, the lands conservation investments from the cap-and-trade auction proceeds should also be seen as a crucial component to any smart growth strategies, as we cannot achieve true smart growth without much more attention paid to the considerable problem of agricultural lands conversion.

Thank you for the opportunity to comment.

Sincerely,

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APPENDIX A

Full List of Suggested Edits to the Text: (Consolidated from above)

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