



Mike Tollstrup  
Chief  
Project Assessment Branch  
California Air Resources Board  
1001 I Street  
Sacramento, CA 95814

November 1, 2013

Re: 2013 Scoping Plan Update Comments

Dear Mr. Tollstrup,

We appreciate the opportunity to provide comments on the 2013 Scoping Plan Update on behalf of the California Climate and Agriculture Network (CalCAN), a coalition of sustainable agriculture and farmer member groups. We came together out of concerns for climate change impacts on California agriculture and to forward sustainable agricultural solutions to a changing climate.

We support the inclusion in the update of the 2030 emission reduction target as an interim to the 2050 emission reduction goal. The recent record high of 400 ppm in global carbon emissions requires that significant steps must be taken now to avoid the worst impacts of climate change. We also support prioritizing mitigation activities that also provide adaptation benefits, such as improved water use efficiency and increased biological diversity. We support an even greater emphasis than what is in the current draft update on the mitigation/adaptation nexus, especially in biological systems like agriculture.

The update makes mention of the cap-and-trade auction proceeds as possible funds to support the strategies to meet the 2020 and 2030 goals. It is crucial that cap-and-trade auction proceeds go towards investments in activities that meet the objectives of AB 32. We urge that the \$500 million in auction proceeds that was loaned to the General Fund be repaid, with interest, as soon as possible and that no more borrowing of the funds occur. Such borrowing undermines AB 32 implementation and erodes the state's ability to achieve the economic, environmental and health co-benefits of the climate mitigation strategies outlined in the update.

Below we offer comments on the update that are most relevant for agriculture, touching on several focus areas.

**1. The strategy of categorizing agricultural emission targets by management category is the wrong approach. A whole farm systems approach is needed.** It is proposed in the Agriculture focus area of the update that, "Given the variability in agricultural operations throughout the State, the number of potential GHG sources at each operation, and the number of potential co-beneficial management practices for each source, one approach to reducing GHG emissions from agriculture in California is to consider emission reduction goals for general agricultural operation categories, such as manure management, fertilizer use or water use." (page 91)

We strongly urge CARB to not adopt an operation category approach to emission targets, but rather a whole farm systems approach. Biological systems, like agriculture, do not operate like industrial systems that can be compartmentalized and addressed separately. Instead, biological systems are integrated and changes in one area of the system can influence changes in another area of the system. For example, research funded by

CARB to investigate nitrous oxide emissions in agriculture found that in addition to soil management practices like fertilizer use and tillage, irrigation methods influenced fluxes in nitrous oxide emissions<sup>1</sup>. But under the emissions category approach that CARB is proposing, water use would be considered separately from soil management practices in determining emission targets. Consequently, CARB may support strategies in agriculture that are intended to reduce nitrous oxide emissions in soil management, while inadvertently ignoring the influence of irrigation on those emissions.

To better address the diversity of California agriculture and the complexity of greenhouse gas emissions interactions, farming operations must be considered in their entirety. This not only makes sense from an emissions perspective, but also from a farmer-operator perspective. When managing their operations, farmers and ranchers consider their operations as a whole – e.g. how their crop management practices influence their water and energy use and vice versa. They do not work in silos of management practices, and any effort to address emissions by category will likely frustrate and miss important synergies across farm operations.

**2. Agricultural research, technical assistance and financial incentives are needed. Develop competitive grants program.** A whole farm systems approach to greenhouse gas emissions reductions and increased carbon sequestration is possible through a coordinated effort that brings together agricultural research, technical assistance and financial incentives.

Since the 2008 Scoping Plan, we have made significant advancements in our understanding of greenhouse gas emissions and carbon sequestration issues in California agriculture<sup>2</sup>. Research funded by CARB, CEC and CDFA have contributed significantly to a greater understanding of strategies in farming and ranching systems that can provide climate benefits. More research is still needed to fill the gaps in our understanding. However, the primary funding source for this California-specific agriculture and climate research is no longer available. The CA PIER program, coordinated by CEC, no longer funds agricultural climate change mitigation and adaptation research. New funding sources must be identified and made available; cap-and-trade auction proceeds are one obvious possible source of funding.

Through education, technical assistance and financial incentives projects working in collaboration with farmers and ranchers and technical experts (e.g. Resource Conservation Districts, Cooperative Extension, NGOs, etc.), changes in farming systems that provide climate benefits and their co-benefits can be achieved.

We know from our experience with national agricultural conservation programs that the potent combination of grower technical assistance and financial incentives to offset producer risks (e.g. lower crop yields) can help transform practices in agriculture and bring about significant change. The wildlife habitat farming practices in the rice industry, the significant expansion of organic farming operations in the state and the many miles of hedgerows plantings for pollinator habitat are just a few successful examples. We can do the same to promote and expand climate-friendly agricultural systems that reduce reliance on fossil fuels,

---

<sup>1</sup> <http://www.arb.ca.gov/ag/fertilizer/fertilizer.htm>

<sup>2</sup> State and international efforts to assess GHG emissions reduction strategies in agriculture are on-going. CEC PIER research, while no longer funding in this area, provide crucial state funding for ag mitigation research. See: <http://www.climatechange.ca.gov/research/> Duke University has contracted with UC researchers to review the state of the science on ag mitigation opportunities in CA. The final reports are due this fall. See: <http://nicholasinstitute.duke.edu/initiatives/technical-working-group-agricultural-greenhouse-gases-t-agg/california-project> International efforts can also inform our understanding of ag mitigation opportunities. See: <http://www.organicandclimate.org/>

support biological diversity, reduce methane and nitrous oxide emissions, produce renewable energy and increase water and energy use efficiency. But we cannot do that without a coordinated state effort aimed at supporting sustainable farming systems in the state.

The proposed clearinghouse of information is a good start (page 94, Outreach and Support), but should only be the beginning. We recommend a competitive grants program that supports agricultural research, grower technical assistance and financial incentives to support farming systems that can demonstrate greenhouse gas emissions reductions, increased carbon sequestration and multiple co-benefits, including improved air and water quality and greater agricultural resilience.

**3. Recognize the climate benefits of low-input, biologically diverse agriculture.** The update does little to address the climate benefits of low-input, biologically diverse agriculture. For example, the update focuses on synthetic fertilizer strategies to reduce nitrous oxide emissions (page 92, Nitrogen management), making no mention of biological approaches to fertility management that can also reduce greenhouse gas emissions. Alternatives to synthetic fertilizer include the use of cover crops<sup>3</sup>, compost, crop rotations and other biological soil management strategies that reduce the reliance on fossil fuel inputs, improve soil carbon and improve water quality. A CEC funded study found that reductions in synthetic fertilizer, use of cover crops, and conservation tillage – used in combination – offered the best opportunities to sequester carbon in soils<sup>4</sup>.

We also cannot afford to overlook organic farming systems when considering agricultural systems that offer climate benefits. California is the number one organic farming state in the country with nearly 3,000 certified organic operations producing nearly a \$1 billion in annual sales. Organic systems are prohibited from using synthetic fertilizers and pesticides, relying instead on biological systems approaches that can offer reduced greenhouse gas emissions and increased carbon sequestration benefits overall, compared to conventional systems. For example, a Central Valley study looking at alternative soil management practices for seven different crops found that organic farming systems sequestered the most carbon, followed by cover cropping, and then conservation tillage<sup>5</sup>. The Food and Agriculture Organization of the United Nations in 2009 formed a Round Table on Organic Agriculture and Climate Change based on their conclusions that many studies find that organic farming systems offer multiple climate benefits<sup>6</sup>. Most recently they published a report finding that organic farms sequestered up to 450 kg more carbon per hectare every year than non-organic farms<sup>7</sup>.

---

<sup>3</sup> USDA has a new climate initiative which includes increasing the use of cover crops, also known as “green manures”. See: <http://www.usda.gov/wps/portal/usda/usdahome?navid=climate-change>

<sup>4</sup> De Gryze, Steven, Rosa Catala, Richard E. Howitt, and Johan Six (University of California, Davis). 2008. Assessment of Greenhouse Gas Mitigation in California Agricultural Soils. California Energy Commission, PIER Energy-Related Environmental Research. CEC-500-2008-039.

<sup>5</sup> De Gryze, S., A. Wolk, S.R. Kaffka, J. Mitchell, D.E. Rolston, S.R. Temple, J. Lee, and J. Six. 2010. Simulating greenhouse gas budgets of four California cropping systems under conventional and alternative management. *Ecological Applications*. 20(07): 1805-1819 <http://www.ncbi.nlm.nih.gov/pubmed/21049871>

<sup>6</sup> See: <http://www.fao.org/organicag/oa-specialfeatures/en/>

<sup>7</sup> Gattinger, A., A. Mueller, M. Haeni, C. Skinner, A. Fliessbach, N. Buchmann, P. Mäder, M. Stolze, P. Smith, N. El-Hage Scialabba, and U. Niggli. 2012. [Enhanced top soil carbon stocks under organic farming](#). Proceedings of the National Academy of Sciences. Summary available: [http://www.organicandclimate.org/993.html?&no\\_cache=1&tx\\_ttnews%5Btt\\_news%5D=1016](http://www.organicandclimate.org/993.html?&no_cache=1&tx_ttnews%5Btt_news%5D=1016)

We recommend that the update include recommendations to further biologically-based, low-input agricultural management systems, including organic agriculture, through state agency supported research, technical assistance and financial incentives.

**4. Farmland conservation is a crucial strategy to avoid significant emissions. Farmland conservation should be integrated into the transportation emissions strategy portfolio.** We strongly support the inclusion of farmland conservation as a strategy in the update. We support renewed state funding for the Williamson Act subvention program and we recommend the allocation of additional funds for a pilot effort under the Williamson Act to prioritize farmland conservation at the urban/suburban edge. We also support funding for two other critical farmland conservation programs at DOC: the Farmland Mapping and Monitoring Program and the California Farmland Conservancy Program. FMMP provides the data necessary for farmland conservation planning. CFCP can fund conservation easements on farmland under threat of development.

While the update acknowledges the importance of land use planning to achieve reduced vehicle miles travelled, it makes no mention of the importance of farmland and open space conservation as a central strategy to support reduced VMTs. This is a missed opportunity.

We recommend that the update include in the transportation focus farmland and open space conservation strategies to support reduced VMTs. Related strategies include the financial support for conservation easements with willing landowners. Such easements permanently protect land from development. Urban growth boundaries, agricultural zoning that supports in-fill development and other land use planning tools can support farmland conservation and meet the objectives of the Sustainable Communities Strategies, as described in the update<sup>8</sup>.

**6. Dairy digester technology should not be mandated for individual operators. Community digesters are a better approach.** California lost 100 dairy operators last year alone as dairy prices continued to fluctuate below the real cost of production<sup>9</sup>. Dairy digester systems can cost millions of dollars and for the average dairy operator the addition of a digester is well beyond their capital resources. Moreover, digesters are better operated at a community-scale rather than at the individual level. Having regional digesters that can take manure and other by-products to capture methane and produce renewable energy makes better economic and environmental sense in the long term. It avoids locking in a dairy producer to provide a certain amount of manure to operate their own digester, allowing them greater flexibility on their herd size, and it does not commit them to an expensive capital project, especially as dairy prices continue to remain volatile. Moreover, a community digester can provide efficiencies of scale and some studies suggest they provide greater opportunities to produce multiple environmental and economic benefits compared to individual digesters<sup>10</sup>.

**7. Combine working lands strategies. Create natural and working lands investment team.** We support the inclusion of the natural and working lands focus area of the plan. However, the division of agricultural lands conservation issues between the agriculture focus and the natural and working lands focus seems unnecessary and may limit coordination across working land types. We recommend combining all natural and working lands strategies into one focus area. Other focus areas like agriculture and transportation can mention the farmland conservation strategies that are complementary and refer back the

---

<sup>8</sup> For more on the farmland conservation and climate change nexus, see: <http://calclimateag.org/triple-harvest/>

<sup>9</sup> See: [http://www.agweb.com/article/california\\_ag\\_production\\_exceeds\\_44\\_billion\\_in\\_2012/](http://www.agweb.com/article/california_ag_production_exceeds_44_billion_in_2012/)

<sup>10</sup> See: <http://www.ctic.purdue.edu/resourcedisplay/234/>

natural and working lands section. Rangeland conservation issues are influenced by cropland conservation/conversion issues and vice versa. The division is artificial and the focus area on natural and working lands should include all working lands in agriculture, not just rangelands.

Under the natural and working lands focus area, it is recommended the creation of a “climate investment working group to develop specific recommendations regarding individual and combinations of approaches for funding action to ensure that California’s forests provide net carbon” (page 102). We recommend expanding this investment working group to include natural and working lands. There is tremendous pressure to convert our natural and working lands, which would result in the loss of these important carbon sinks. We need a coordinated investment strategy that understands the synergies and challenges presented by natural and working lands conservation efforts.

**8. Address farmland conservation and renewable energy development conflicts.** As the update clearly shows, the growth of solar development has brought California on track to achieving its RPS goals and GHG reductions by 2020. However, land use tensions have arisen around the development of prime farmland for solar production. We recommend a coordinated and cross-sector effort to target solar development on degraded, marginal agricultural land while maximizing the protection of natural resources and farmland, each of which hold great potential for GHG reductions and climate change adaptation.

**9. Support on-farm energy efficiency outreach programs.** We recommend that the Scoping Plan include greater acknowledgement of the importance of on-farm energy efficiency. Moving toward the 2020 goals, there is strong potential for efficiency gains in the use of agricultural equipment, including water distribution systems and refrigerated storage facilities.

Most agricultural producers rely on irrigation and refrigeration for their operations. Many would benefit from the energy efficiency programs such as energy audits and related incentives. Few small and mid-scale farm and ranch operators have dedicated employees who work on issues such as energy efficiency, thus requiring tailored outreach programs with measurable objectives that meet the needs of these producers.

By including specific mention of integrating energy efficiency into the operation of small- to mid-scale farms and ranches in the state, CARB can help unleash the vast and largely untapped potential for these producers to contribute to reaching the AB 32 greenhouse gas reduction goals. We recommend the update include the strategy of the developing and enhancing innovative energy efficiency outreach programs for the agricultural sector, to be delivered through the investor-owned utilities, as well as through existing agricultural outreach programs at relevant state agencies (e.g. CEC).

In particular, we suggest including a “Key Recommended Action” in the Energy sector that recognizes and promotes the potential of the agricultural sector to contribute to ARB’s Energy-related goals.

**10. Remove barriers to small-scale distributed renewable energy.** Several recent pieces of legislation (e.g. SB 489; SB 594) have sought to remove barriers to the inclusion of small-scale renewable energy producers in the transformation of California’s energy system structure. We are pleased to see CARB’s emphasis on distributed renewables, including bioenergy and storage capacity, as a cornerstone for our energy future. But we suggest a greater emphasis on prudent, coordinated policy and regulatory measures that make it easier for small renewable energy producers to contribute toward these goals, including simplified interconnection rules.

In addition, investments should be made in research and incentives that help develop and scale up technologies that produce renewable energy from some agricultural by-products, much as the solar and electric car industries have been supported with public investment.

**11. Develop timeline and responsible agencies to implement strategies.** The update provides little direction on how to achieve the objectives and strategies of the agriculture focus and related areas. We recommend the final update include a timeline for the implementation of the agriculture strategies, across focus areas, along with lead agencies responsible for implementation.

Thank you for your consideration of our comments.

Sincerely,



Jeanne Merrill  
Policy Director



Adam Kotin  
Policy Associate