CCOF

Advancing organic agriculture through certification, education, advocacy, and promotion.

July 9, 2021

California Air Resources Board
1001 I Street
Sacramento, CA 95814

Re: CCOF Comment on Public Workshop Series to Commence Development of the 2022 Scoping Plan Update

Dear California Air Resources Board:

California Certified Organic Farmers (CCOF) appreciates the opportunity to comment on the Public Workshop Series to Commence Development of the 2022 Scoping Plan Update (Public Workshop Series) hosted by California Air Resources Board (CARB), California Department of Food and Agriculture (CDFA), and other agencies.

CCOF is a nonprofit organization that represents over 3,000 organic farms and businesses throughout California. We advance organic agriculture for a healthy world through certification, education, and advocacy. As the premier organic state, California accounts for 40 percent of all organic production in the country.[1]

The 2022 Scoping Plan describes California's strategy to achieve carbon neutrality by 2045, where carbon dioxide and other greenhouse gas (GHG) emissions are equal to or less than the amount of carbon sequestered.[2] This ambitious target requires the state develop concrete steps to increase sequestration on California's natural and working lands (NWL). **CCOF recommends the 2022 Scoping Plan promote environmental health, build on the latest science, reflect public input, and set a 2045 NWL climate goal.**

Promote environmental health and consult Department of Pesticide Regulation

The Public Workshop Series does not center environmental health. While CARB establishes a holistic ecosystem approach as a driving principle,[3] the agency omits environmental health as a co-benefit of NWL.[4] Environmental health considers all aspects of the environment that might impact human health, including toxic chemicals.[5] CARB should support strategies, like organic farming, that promote environmental health and contribute to more equitable health outcomes.

Fostering environmental health aligns with Executive Order N-82-20, which compels CARB and other state agencies to "[p]romote healthy lands that provide multiple benefits including improved air quality, reliable water supply, thriving communities, and economic stability."[6] Organic food and farming underpin community health with studies showing

[1] California Department of Food and Agriculture, California Agricultural Statistics Review 2019-2020. Retrieved from California Agricultural Statistics Review 2019-2020.
[2] California Air Resources Board. Carbon Neutrality About. Retrieved from Carbon Neutrality | California Air Resources Board.
[3] California Air Resources Board, Carbon Neutrality and Natural and Working Lands, June 2021. Retrieved from Carbon Neutrality and Natural and Working Lands
[4] *Ibid*.
[5] California Department of Public Health, Environmental Health, April 2017. Retrieved from Environmental Health (ca.gov).
[6] Executive Order N-82-20 (6)(a).

organic foods to have higher levels of vitamins, minerals, and antioxidants[7] while organic farms lead to cleaner water,[8] and lower risk of disease from pesticide exposure.[9] Organic agriculture promotes environmental health by building thriving communities and supporting healthy land and water.

Executive Order N-82-20 also directs CARB to "[a]dvance equity and opportunity for all regions of California."[10] Advancing equity requires addressing synthetic pesticide exposure. In California, Latino children are 91 percent more likely than White children to attend schools with the highest pesticide exposure.[11] This exposure is linked with increased cognitive problems such as attention deficit disorder,[12] lower memory and intelligence,[13] and impaired neurobehavioral development,[14] as well as enhanced risk of diabetes[15] and asthma.[16] By prohibiting synthetic pesticides, organic agriculture contributes to more equitable health outcomes.

To meet CARB's principle of focusing on the ecosystem as a whole and to achieve the directives outlined in Executive Order N-82-20, CARB should promote practices, including organic agriculture, that secure environmental health. CCOF also recommends CARB collaborate with the Department of Pesticide Regulation throughout the scoping plan process to ensure synthetic pesticide exposure on NWL is addressed.

Incorporate the latest science to build on previous climate plans

Previous scoping plans and the Public Workshop Series do not incorporate the latest science that outlines the climate benefits of organic farming. While CCOF commends CARB's principle to base policy on science and data,[17] it is crucial to not cherry-pick research. Achieving carbon neutrality requires building on proven tools for sequestering carbon and reducing emissions. UC California research points to organic farming as an effective method to sequester carbon and reduce emissions, particularly of methane.

- A UC Davis Long-Term Research on Agricultural Systems (LTRAS) study found that after 10 years, organic systems resulted in 14 times the rate of carbon sequestration as the conventional system.[18] After 20 years, organically managed soils sequestered significantly more soil organic carbon than conventionally managed soils.[19]

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[7] Brandt K., & Molgaard, J. P. (2001). Organic agriculture: Does it enhance or reduce the nutritional value of plant foods? *J. Sci Food Agr., 81,* 924–931.

[8] Harter, T., Lund, J. R., Darby, J., Fogg, G. E, Howitt, R., Jessoe, K. K., … Rosenstock, T. S. (2012). *Addressing nitrate in California's drinking water with a focus on Tulare Lake Basin and Salinas Valley groundwater.* Report for the State Water Resources Control Board Report to the Legislature. Center for Watershed Sciences, University of California, Davis.

[9] Benador, L., Damewood, K., & Sooby, J. (2019). *Roadmap to an organic California: Benefits report*. Santa Cruz, CA: California Certified Organic Farmers (CCOF) Foundation.

[10] Executive Order N-82-20 (6)(b).

[11] California Environmental Health Tracking Program. (2014). Agricultural pesticide use near public schools in California. Sacramento, CA: California Department of Public Health.

[12] Marks, A. R., Harley, K., Bradman, A., ogut, K., Barr, D.B., Johnson, C…Eskenazi, B. (2010). Organophosphate pesticide exposure and attention in young Mexican-American children: The CHAMACOS study. *Environ Health Perspect., 118*(12), 1768-1774.

[13] Rauh, V., Arunajadai, S., Horton, M., Perera, F., Hoepner, L., Barr, D. B., & Whyatt, R. (2011). Seven-year neurodevelopmental scores and prenatal exposure to chlorpyrifos, a common agricultural pesticide. *Environ Health Perspect., 119*(8), 1196–1201.

[14] Whyatt, R. M., Rauh, V., Barr, D. B., Camann, D.E., Andrews, H. F., Garfinkel, R., . . . Perera, F. P. (2004). Prenatal insecticide exposures an birth weight and length among an urban minority

[15] Lim S., Ahn, S. Y., Song, I. C., Chung, M. H., Jang, H. C., Kyong, S. P., . . . Lee, H. K. (2009). Chronic exposure to the herbicide, atrazine, causes mitochondrial dysfunction and insulin resistance. *PLOS ONE, 4*(4), e5186.

[16] Hernandez, A. F., Parron, T., & Alarcon, R. (2011). Pesticides and asthma. *Curr Opin Allergy Clin Immunol.,11*(2), 90-96.

[17] California Air Resources Board, Carbon Neutrality and Natural and Working Lands, June 2021. Retrieved from Carbon Neutrality and Natural and Working Lands

[18] Kong, A. Y., Six, J., Bryant, D. C., Denison, R. F., & Van Kessel, C. (2005). The relationship between carbon input, aggregation, and soil organic carbon stabilization in sustainable cropping systems. *Soil Sci Soc Am J.*, 69, 1078-1085.

[19] Wolf, K., Herrera, I., Tomich, T. P., & Scow, K. (2017). Long-term agricultural experiments inform the development of climate-smart agricultural practices. *California Agriculture, 71,* 120-124.

- Organic crop and livestock production practices build long-term soil fertility, creating healthy soils that can store increased levels of nutrients, including carbon.[20]
- The Rodale Farming Systems Trial, which is the longest running organic comparison study in the United States, documented that after 22 years, soil organic carbon increased by 15-28% in organically managed soils compared to 9% in the conventionally managed soils.[21]
- An extensive 2017 study comparing soils from 659 certified organic farms and 728 conventional farms found that organic farms across 48 states sequester significantly more carbon than conventional farms.[22]
- Globally, evidence shows that organically managed soils hold more carbon and have higher rates of carbon sequestration than soil from non-organic systems.[23]
- All organic producers must graze ruminant animals on pasture for a minimum of 120 days per year[24] while non-organic ruminants may be raised in confined feeding operations. UC Davis scientists found that dairy cow and heifer manure on pasture emits minimal GHGs compared to lagoon storage, liquid slurry storage, and dry lot manure, which together account for 98% of dairy manure methane emissions in California.[25]

Omitting whole-farm solutions like organic certification ignores the latest science and misses the opportunity to adopt multiple climate-smart practices through one strategy. CCOF recommends CARB specifically name organic as a nature-based climate solution.

Reflect public input in the NWL strategy

CDFA's presentation as part of the Public Workshop Series omits organic recommendations. Soliciting public input is a key component of any policymaking process. Executive Order N-82-20 mandates that CDFA incorporate stakeholder input into the 2022 Scoping Plan process.[26] CCOF commends CDFA's farmer- and rancher-led listening session process; however, we are concerned that while the listening session draft report[27] outlines 27 recommendations that specifically call for organic support, CDFA's presentation did not include any reference to organic.[28]

CCOF supports the organic farmer and rancher-led recommendations from the report and encourages CDFA to reflect this public input in scoping and NWL plans and presentations.

1. Pay for certification and inspection fees for farmers transitioning to organic practices.
2. Provide free consultations with experienced experts for farmers and ranchers who want to transition to regenerative and/or organic. Consultants should have years of hands-on experience informed by data and science, besides University of California (UC) Cooperative Extension.

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[20] Suddick, E. C., Scow, K. M., Horwath, W. R., Jackson, L. E., Smart, D. R., Mitchell, J., . . . Six, J. (2010). The potential for California agricultural crop soils to reduce greenhouse gas emissions: a holistic evaluation. *Advances in Agronomy, 107,* 123-162.

[21] Pimentel, D., Hepperly, P., Hanson, J., Douds, D., & Seidel, R. (2005). Environmental, energetic and economic comparisons of organic and conventional farming systems. *Bioscience, 55*(7), 573-583.

[22] Ghabbour, E. A., Davies, G., Misiewicz, T., Alami, R. A., Askounis, E.M., Cuozzo, N.P., . . . Shade, J. (2017). Chapter one - national comparison of the total and sequestered organic matter contents of conventional and organic farm soil. *Advances in Agronomy, 146,* 1-35.

[23] Gattinger, A., Muller, A., Haeni, M., Skinner, C., Fliessbach, A., Buchmann, N., . . . Niggli, U. (2012). Enhanced top soil carbon stocks under organic farming. *Proc. Natl. Acad. Sci. U.S.A., 109,* 18226–18231.

[24] Rinehart, L., & Baier, Ann. (2011). Pasture for organic livestock: understanding and implementing the national organic program (NOP) pasture rule. *U.S. Department of Agriculture, Agricultural Marketing Service.* Retrieved from https://www.ams.usda.gov/sites/default/files/media/NOP UnderstandingOrganicPastureRule.pdf.

[25] Kaffka, S., Barzhee, T., El-Mashad, H., Williams, R., Zicari, S., & Zhang, R. (2016). Evaluation of dairy manure management practices for greenhouse gas emissions mitigation in California. Final Technical Report to the State of California Air Resources Board

[26] Executive Order N-82-20 (8)

[27] California Department of Food and Agriculture, Farmer- and Rancher-Led Climate Change Solutions Listening Sessions, February 2021. Retrieved from CDFA Farmer and Rancher Led Climate Solutions Summary (ca.gov).

[28] California Department of Food and Agriculture, Farmer and Rancher-Led Climate Solutions Listening Sessions, June 2021. Retrieved from Farmer and Rancher-Led Climate Solutions Listening Sessions (ca.gov).

3. Build markets for farm products with the highest carbon sequestration. Scaling organic labeling and requiring public kitchens to buy 60% organic are two ways to do this.
4. Develop and expand the Fertilizer Research and Education Program (FREP) scope, to include manures. Similar to FREP, conduct research and provide recommendations for improving nutrient management using organic sources of nutrients, such as manures.
5. Incentivize farmers to achieve or transition to regenerative organic certification.
6. Promote programs advancing climate change solutions, such as California Certified Organic Farmers (CCOF), Agricultural Services Certified Organic (ASCO), Sustainability in Practice (SIP) and the Irrigated Lands Regulatory Program (ILRP).
7. Research and quantify the benefits of transitioning from conventional to organic farming practices.
8. Support experiments to identify strategies for maximizing microbial productivity and soil biodiversity, for example long-term, large-scale trials on organic farms using multi-species cover crop blends (with a minimum of eight species suggested by previous studies) plus compost.
9. Look to the USDA National Organic Program as an existing farmer-led solution
10. Research and publish case studies of self-identified successful organic farmers that include economic breakdowns and explanations of choices and decisions the farmer made. Highlight and recognize in these case studies the quantitative and qualitative outcomes and benefits of on-farm solutions to the farmer, on-farm biodiversity, and adjacent land uses and ecosystems.
11. Provide funding or cover start-up costs through HSP for transitional organic certification. Organic has a market-based premium built in to incentivize adoption. The challenge is growers must go through a three-year transition period to convert to organic. That process must be funded by the grower (and any Healthy Soils programs which they may qualify for). Only after this transition period can the grower start recouping their investment. For open field crops, being made by many California famers while also providing significant funding, technical assistance and other support to help California farmers transition away from agricultural reduce the use of synthetic pesticides. o three years can seem like an eternity to have more expensive farming methods without the financial support.
12. Waive certification and inspections fees and provide consultation on organic farm plans, to get a bigger return on investment for carbon sequestration compared to incentivizing siloed practices like HSP is doing using COMET-Planner.
13. Support farmers in the transition to organic farming practices. Current pesticide-dependent farming practices are not addressing the increase in pest impacts as a result of climate change.
14. Compensate farmers for the fees for organic transition, certification, and inspections (the Pennsylvania Farm bill provides an example of this approach). Paperwork requirements and certification costs are some of the biggest barriers to adopting and maintaining organic farming practices.
15. Offer free or subsidized consultation to develop an organic farm transition plan for those interested in transitioning (the Pennsylvania Farm bill provides an example of this approach).
16. Subsidizing transition to organic farming (covering expenses related to development of organic plans, ensuring no farmer has to pay for organic certification, providing a full day or two of free transition assessment/services, etc.).
17. Working with other government entities to support public procurement from small-and medium-sized California organic farmers, especially from socially disadvantaged farmers.
18. Add an incentive program for adoption for integrated or organic pest management practices to have a more holistic and comprehensive approach to climate change resiliency.
19. Develop something similar to the NRCS cost-share program to support farmer transition to organic practices.
20. Improve the HSP modeling tool to include farmers who want to do whole orchard recycling, compost and cover crop on the same field. Funding has been denied to farmers for these three practices because of the limitation of HSP modeling for organic carbon inputs to soils. This was a lost opportunity for HSP.
21. Review the results of Dr. Horwath's research at UC Davis that concludes that the metric of organic was a better predictor of carbon sequestration compared to no till and cover crops. Adopt policies in accordance with those findings

22. Work with CARB to reduce prerequisites that may be a barrier to investments for scaling transition to organic farming practices.
23. Find ways to overcome the restrictions that limit organic farmers' ability to recycle into organic systems. Food waste and brewery waste grain would be good examples of this.
24. Allow transitional organic or organic certification to be a qualification for HSP funding, rather than requiring farmers to resubmit the same information as that program.
25. To sequester carbon, require public kitchens to buy a steadily increasing amount of organic. For example 10% by 2025 and 10% more each year until 50% by 2028.
26. Promote organic farming by implementing a buy-local policy for State-funded public kitchens.
27. Encourage "systems" and not "practices"; research shows organic blocks using cover crops sequester more carbon than any other combinations of practices.

Set a 2045 climate goal for California's NWL

Previous scoping plans and the Public Workshop Series do not set a climate goal for California's NWL. While the 2017 Scoping Plan proposes a NWL GHG reduction goal of 15 to 20 million metric tons by 2030, the state does not have an overarching plan or designated agency to coordinate a cohesive strategy to meet this target.[29] The state's subsequent draft NWL plan does not set specific emissions reduction or carbon sequestration goals, but does highlight the need for the state to more than double its pace and to increase fivefold the acres of cultivated lands and rangelands under state-funded soil conservation practices.[30] Developing a roadmap for NWL is critical to ensuring California's farms, forests, and wetlands become carbon sinks, helping the state meet its carbon neutrality and climate goals. A 2017 Standard study concluded that implementing climate mitigation activities on NWL can contribute up to 17 percent of California's GHG reduction goal.[31] CCOF recommends CARB establish a 2045 climate goal for California's NWL as outlined in Assembly Bill 284.

Thank you for the opportunity to comment. Please do not hesitate to contact us for further information.

Sincerely,

Rebekah Weber
Policy Director
CCOF

[29] California Air Resources Board, California's 2017 Climate Change Scoping Plan. Retrieved from California's 2017 Climate Change Scoping Plan.
[30] California Air Resources Board, et al., California 2030 Natural and Working Lands Climate Change Implementation Plan, January 2019. Retrieved from CA 2030 NWL Climate Change Implementation Plan (January 2019, Draft).
[31] Cameron, D.R., Marvin, D.C., Remucal, J.M., and M.C. Passero. (2017). Ecosystem management and land conservation can substantially contribute to California's climate mitigation goals. *Proceedings of the National Academy of Sciences of the United States of America*, 114, 12833 – 12838. Retrieved from https://www.pnas.org/content/pnas/114/48/12833.full.pdf.