



To: Deputy Secretary Hansen
California Natural Resources Agency (CNRA)
Submitted to: CaliforniaNature@resources.ca.gov

Re: Draft Natural and Working Lands Climate Smart Strategy

Dear Deputy Secretary Hansen:

Pesticide Action Network and Californians for Pesticide Reform strongly support the inclusion of safer pest management and other strategies that transition California agricultural systems away from harmful pesticides in the Draft Natural and Working Lands Climate Smart Strategy. California's ability to adapt to and mitigate climate change strongly depends on strategies that minimize synthetic pesticide use and center impacted communities.

However, **the draft strategy does not go far enough in setting meaningful targets and incentives that would transition our agricultural systems away from toxic pesticides** and towards safer and more climate-friendly alternative agricultural systems like agroecological and organic agriculture. We urgently need this paradigm shift towards diversified agroecological farming in order to promote public and soil health, food sovereignty and farmer and farmworker livelihoods.

Research shows **climate change will most likely result in increased synthetic pesticide use** due to decreased efficacy of pesticides and increased pest pressure.¹ These findings are highly concerning, given pesticides are already applied on cropland in California at a rate 4.5 times higher than the national average.² At the same time, many synthetic pesticides are a source of greenhouse gas (GHG) emissions³ while alternative agriculture systems that limit synthetic

¹ Taylor, R. A. J., Daniel A. Herms, John Cardina, and Richard H. Moore. (2018). Climate Change and Pest Management: Unanticipated Consequences of Trophic Dislocation. *Agronomy* 8 (1): 7.; Delcour, I., Spanoghe, P., & Uyttendaele, M. (2015). Literature review: Impact of climate change on pesticide use. *Food Research International*, 68, 7-15.; Bebbler, Daniel P., Timothy Holmes, and Sarah J. Gurr. (2014). The Global Spread of Crop Pests and Pathogens. *Global Ecology and Biogeography* 23 (12): 1398–1407.

² Ferguson, Rafter, Kristina Dahl, and Marcia DeLonge. (2019). *Farmworkers at Risk: The Growing Dangers of Pesticides and Heat*. Cambridge, MA: Union of Concerned Scientists.
<https://www.ucsusa.org/resources/farmworkers-at-risk>

³Spokas K., Wang D. (2003). Stimulation of nitrous oxide production resulted from soil fumigation with chloropicrin. *Atmospheric Environment* 37: 3501–3507; Spokas K., Wang D., Venterea. R. (2004). Greenhouse gas production and emission from a forest nursery soil following fumigation with chloropicrin and methyl isothiocyanate. *Soil Biology & Biochemistry* 37: 475–485; Volatile Organic Compound (VOC) Emissions from Pesticides. Department of Pesticide Regulation. <https://www.cdpr.ca.gov/docs/emon/vocs/vocproj/vocmenu.htm>.

pesticide use, like organic farming, have been shown to significantly increase carbon sequestration in soils in multiple field trials in California.⁴

Communities that would bear the brunt of an increase in pesticide use, such as farmworkers, are also those most likely to experience compounded health risks from climate change, such as exposure to extreme heat and poor air quality from wildfire smoke.⁵ Farmworkers are also land stewards, directly involved in growing and harvesting food. They therefore must be considered an integral part of the transition to safer, more sustainable and agroecological farming. There are multiple instances where PAN and CPR strongly support recommendations in the draft strategy that prioritize equity and pesticide reduction strategies.

We strongly support the following current inclusions in the draft strategy:

- The "Opportunities to Scale Action" section in the Natural and Working Lands Climate Smart Strategy that emphasizes farmworker land management support, training, and apprenticeships. We urge CRNA to continue fleshing out specifically how such programs can be implemented and shaped by farmworker priorities and engagement.
- The recognition that the Sustainable Pest Management Work Group will influence future iterations of the Natural and Working Lands Climate Smart Strategy
- The incorporation of “integrated pest management” and “safer, more sustainable pest management practices and tools to support the accelerated transition away from harmful pesticide” as priority nature-based solutions for croplands and a strategy to protect public and worker health. However, all too often IPM strategies depend too much on chemical pesticides. Ecologically-based IPM strategies should be incentivized that emphasize prevention, biological and cultural pest control measures and build soil health while minimizing impact to surrounding communities.
- Scaled up training for integrated pest management technical assistance providers. However, we note that many IPM technical assistance providers rely too heavily on synthetic pesticides to combat pest pressures and recommend that IPM training should emphasize prevention, and biological and cultural pest control measures.
- The prioritization of “agroecological practices in agricultural climate smart land management efforts”
- The maximization of “climate, public health, and economic benefits to climate vulnerable communities.”

⁴ 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; 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; Horwath, W. R., Devenire, O. C., Doane, T. A., Kramer, T. W., and van Kessel, C. (2002). Soil carbon sequestration management effects on nitrogen cycling and availability. In *Agricultural Practices and Policies for Carbon Sequestration in Soil* (J. M. Kimble, R. Lal, and R. F. Follett, Eds.), 155–164; 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.

⁵ Ferguson, Rafter, Kristina Dahl, and Marcia DeLonge. (2019). *Farmworkers at Risk: The Growing Dangers of Pesticides and Heat*. Cambridge, MA: Union of Concerned Scientists. <https://www.ucsusa.org/resources/farmworkers-at-risk>

- The idea to further “explore the potential for universal regenerative organic school meals in California.”

However, more should be included in the strategy focused on farmworker and Latinx community impacts from pesticide use and climate change as detailed in the recommendation section below.

We recommend the following amendments to the Draft Natural and Working Lands Climate Smart Strategy in order to ensure they are inclusive of impacted communities and accelerate California’s transition away from toxic pesticides:

- **Include an ambitious pesticide reduction target under Social Justice/Equity Indicators to 1) reduce the use of synthetic pesticides by 50% by 2030 and 2) reduce the use of highly hazardous pesticides by 75% by 2030, starting with organophosphates, fumigants, paraquat and neonicotinoids.**
- Explicitly support organic and agroecological systems as climate resilience and mitigation strategies. Incentives should include comprehensive support for organic transition that expands beyond “organic system plans.” Such support should include direct financial incentives during the transition period and more technical assistance providers with a specialization in organic and agroecology – with priority to serving socially disadvantaged farmers. UC IPM extension farm advisor staff has decreased by more than a third since 2015, from 11 to seven advisors, making up only 2.6% of total UC cooperative extension staff.⁶ UC ANR has requested an additional 15 IPM advisors and specialists -- the second highest requested for a UC ANR program.⁷ Only one position focuses on organic production, meaning less than 0.5% of total UC resources go to organic specialists⁸ in a state where organic makes up 20% of the total value of agriculture⁹ and accounts for 40% of organic production value nationally.¹⁰ **We recommend a statewide target of transitioning 30% of California’s agricultural acreage to organic by 2030.**
- Include specific strategies that protect farmworker health and safety in the context of chemical pesticide use, extreme heat and air quality risk from wildfires as a result of climate change (for example, a climate emergency relief fund for undocumented workers, and support for community-based organizations to build climate resilience in farmworker communities.) CNRA staff should also **ensure that processes for public input on**

⁶ Humiston, G. 2021. UC ANR Budget and Staffing Analysis to Meet the Needs of All Californians. https://ucanr.edu/sites/Professional_Development/Building_Support/Advocacy/.

⁷ Humiston, G. 2021. UC ANR Budget and Staffing Analysis to Meet the Needs of All Californians. https://ucanr.edu/sites/Professional_Development/Building_Support/Advocacy/.

⁸ McNulty, J. 2019. UC Cooperative Extension hires first organic specialist. UC Santa Cruz NewsCenter. May 13, 2019. Calculation based on data in UC ANR Budget and Staffing Analysis: 1/269 total positions = 0.37%.

⁹ Based on calculations using data reported in California Department of Food and Agriculture. 2021. California Agricultural Statistics Review 2019-2020.

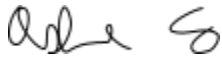
¹⁰ California Department of Food and Agriculture. 2021. California Agricultural Organic Report: 2019-2020.

climate-related strategies are inclusive of farmworkers and other Latinx agricultural communities with Spanish accommodations for all feedback mechanisms.

- Include under “Opportunities to Scale Action” - “Science, Research, Data and Analysis”: Research analyzing the full life cycle of commonly used pesticides, such as fumigants, in California to determine their contribution to GHG emissions. These connections are critically understudied and deserve more state resources dedicated to further analysis. This analysis would include direct GHG emissions such as nitrous oxide associated with fumigant use, as well as indirect contributions from production, transport, and application. Indirect effects include the production of tropospheric ozone from volatile organic compound (VOC) pesticides.
- Add an incentive under “Incentives and Procurement” – that focuses on providing direct incentives to farmers and ranchers to reduce chemical pesticide use on-farm. Currently, no program exists in California, including the Healthy Soils Program or BIFS, that provides direct payments to farmers implementing ecologically-based IPM and other practices that reduce synthetic pesticide use. This must change if California is to reach its climate and equity goals.


Thank you for the opportunity to comment. We are happy to discuss any of these recommendations with CNRA staff.

Sincerely,



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Pesticide Action Network North America is one of five regional centers worldwide representing hundreds of organizations in more than 90 countries. We work to promote the transition to a more just and sustainable food and agriculture system that is free from hazardous pesticides. We represent more than 5,000 California members.

Californians for Pesticide Reform is a statewide coalition of 200+ organizations working together to protect public health, improve environmental quality and support a sustainable and just agricultural system by building a diverse movement across California to change statewide and local pesticide policies and practices.