

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

Re: Draft 2021 California Climate Adaptation Strategy

Dear Deputy Secretary Hansen:

Pesticide Action Network and Californians for Pesticide Reform strongly support the inclusion in the Climate Adaptation Strategy of safer, sustainable pest management strategies that transition California agricultural systems away from chemical pesticides. California's ability to adapt and build resilience to climate change requires a paradigm shift away from our current industrial agriculture systems towards agroecological and organic farming systems that center the communities most impacted by agriculture and climate change.

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 shift towards diversified agroecological farming in order to promote public and soil health and food sovereignty and to enhance farmer and farmworker livelihoods.

Our recommendations to strengthen the current draft strategy can be found below:

1. Adopt a stronger success metric to reduce chemical pesticide use

We were encouraged to see the inclusion of “Action 12: Promote safer, sustainable pest management” under the priority “Bolster Public Health and Safety in Light of Increasing Climate Risks.” However, the success metrics should be strengthened to accelerate California's transition towards agroecological pest management and agricultural systems.

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

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.; Bebb, 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.

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

Therefore, the state must limit synthetic pesticide use, a pest management practice that research shows will continue to become less and less effective during the climate change era, while furthering negative health impacts on farmworkers and predominantly Latinx agricultural communities in California who are the most exposed to toxic pesticides.⁵ Rather than the relatively meaningless metric to report on the “number of pounds, acres treated with specified pesticides,” CNRA should adopt a concrete metric to reduce all chemical pesticide use and not just simply report on “specified” pesticides.

We recommend an ambitious success metric 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.

2. Include success metrics to increase technical assistance providers specializing in ecologically-based IPM and organic agriculture and overall organic acreage

CNRA has included another success metric under “Action 12: Promote safer, sustainable pest management” to increase technical assistance through programs that promote safer, more sustainable pest management, such as the Biologically Integrated Farming Systems Program, Proactive Integrated Pest Management Solutions Program, and Interregional Research Program Number Four (IR-4). However, these programs are just one small part of the comprehensive support needed for farmers to transition to these practices and tackle the dearth of technical

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>.

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., Devevre, 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 Cushing, L., Faust, J., August, L. M., Cendak, R., Wieland, W., & Alexeeff, G. (2015). Racial/ethnic disparities in cumulative environmental health impacts in California: evidence from a statewide environmental justice screening tool (CalEnviroScreen 1.1). *American Journal of Public Health*, 105(11), 2341-2348.

assistance providers that specialize in ecologically-based integrated pest management (IPM) and agroecology.

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

Given this overall lack of technical expertise, the draft strategy must include a success metric to increase the number of technical assistance providers specializing in ecologically-based IPM and organic agriculture, with priority to serving socially disadvantaged farmers.

A followup success metric is also needed to determine whether these technical assistance efforts are successful. Therefore, we recommend a success metric **of transitioning 30% of California's agricultural acreage to organic by 2030 under Action 12, which would reduce our overreliance on harmful pesticides while building a more resilient agricultural system.**¹¹

3. Include a new action to address farmworker health and safety

Communities that would bear the brunt of an increase in pesticide use under climate change, 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.¹² Farmworkers are also land stewards, directly involved in growing and harvesting food. In addition, farmworkers can play a key role in scouting for incidence and extent of pests and disease - a fundamental first step in effective IPM implementation. They therefore must be considered an integral part of the transition to safer, more sustainable and agroecological farming.

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.

¹¹ Scialabba, N. E. H., & Müller-Lindenlauf, M. (2010). Organic agriculture and climate change. *Renewable Agriculture and Food Systems*, 25(2), 158-169.

¹² 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>

However, the current draft strategy does not mention farmworkers or these compounded health effects. **The Climate Adaptation Strategy must include a specific action under “Goal C: Reduce urgent public health and safety risks posed by climate change” to increase farmworker protections in the context of chemical pesticide use, extreme heat and air quality risk from wildfires as a result of climate change.** Examples of success metrics include 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 climate-related strategies are inclusive of farmworkers and other Latinx agricultural communities with Spanish accommodations for all materials and feedback mechanisms.

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.