THE ORGANIC CENTER

Sept. 24, 2021

Ms. Michelle Arsenault
National Organic Standards Board
USDA-AMS-NOP

Docket: AMS-NOP-21-0038

RE: Letter to Secretary Vilsack Regarding Climate Change and Organic Agriculture (dated July 13, 2021)

Dear Ms. Arsenault:

Thank you very much for allowing us to comment on The Compliance, Accreditation & Certification Subcommittee's (CACS) preliminary proposal: Letter to Secretary Vilsack Regarding Climate Change and Organic Agriculture.

The Organic Center is a non-profit organization with the mission of convening credible, evidence-based science on the environmental and health benefits of organic food and farming and communicating findings to the public. We are a leading voice in the area of scientific research about organic food and farming, and cover up-to-date studies on sustainable agriculture and health while collaborating with academic and governmental institutions to fill knowledge gaps.

The Organic Center thanks the Compliance, Accreditation & Certification Subcommittee for its Letter to Secretary Vilsack Regarding Climate Change and Organic Agriculture. We also acknowledge and thank the NOSB for including several scientific references that we suggested. We offer, for the record, some additional points with scientific support. We appreciate the NOSB's communication of science regarding the benefits of organic agriculture in regards to its ability to help provide climate change solutions.

Summary:

- ✓ The Organic Center supports the subcommittee's proposed letter and the proposed recommendations in response to the USDA's 90 Day Progress Report.
- ✓ We suggest minor additional points of consideration and clarification, with additional references that will emphasize the benefits of organic as supported by science that was not included in the final proposal.

We offer the following more detailed comments:

Organic's ability to reduce greenhouse gases

The statement presented in Paragraph 4: "Organic farming systems emit lower levels of GHG. Organic agriculture does not rely on synthetic inputs…" could include the additional point that *because* they do not rely on these synthetic inputs greenhouse gas emissions are reduced in two ways: 1) synthetic inputs like pesticides and especially ammonia nitrate fertilizer emit GHGs in their production, *and* 2) synthetic inputs require a lot of energy to manufacture and transport. Studies show that because organic farmers do not use synthetic fertilizer, they emit fewer greenhouse gases and require less energy overall than conventional farming (Seufert and Ramankutty 2017, Camargo *et al*. 2013, Pelletier *et al*. 2008, and Wood *et al*. 2006).

Another additional point that could be presented in Paragraph 4 to support the statement that "…others find that an overall reduction in GHG emissions, due to the widespread adoption of organic farming systems, is possible…" is that organic emits fewer GHGs on a per acre basis, particularly when crop rotations are diversified and lengthened (Hoffman *et al.* 2018), and organic farming can result in a reduction of N_2O emissions up to a 40.2% per hectare (Skinner *et al.* 2019). And see Meier *et al.* (2015) and van der Werf *et al.* (2020) who challenge the traditional Life Cycle Assessment models that compare global warming potential of organic and conventional farming and argue that GWP and costs of organic are often inaccurately overestimated.

Organic's ability to sequester carbon

In paragraph 5, we encourage a stronger emphasis on the statement "…organic farms start from the vantage of having higher soil organic carbon, **suggesting that there is potential for these farms to contribute to climate change mitigation**," as there is a lot of science that consistently shows organic farms have more soil carbon than conventional (Tully and McAskill 2019, see this report by The Organic Center that includes many statistics and references), and that the type of carbon found in soil under organic management is more stable and locked into the ground for longer periods of time (Ghabbour *et al.* 2017). Recent work even pinpoints which organic practices are better at building carbon in the soil (Crystal-Ornelas *et al*. 2021).

The following are additional references not listed in the climate letter's bibliography:

Camargo *et al*. 2013**.** Energy Use and Greenhouse Gas Emissions from Crop Production Using the Farm Energy Analysis Tool. *BioScience*, 63(4):263-273.

Crystal-Ornelas *et al*. 2021. Soil organic carbon is affected by organic amendments, conservation tillage, and cover cropping in organic farming systems: A meta-analysis. *Agriculture, Ecosystems & Environment*, 312 https://doi.org/10.1016/j.agee.2021.107356

Ghabbour *et al*. 2017. Chapter One - National Comparison of the Total and Sequestered Organic Matter Contents of Conventional and Organic Farm Soils. *Advances in Agronomy*, 146:1-35.

Hoffman *et al.* 2018. Energy use and greenhouse gas emissions in organic and conventional grain crop production: Accounting for nutrient inflows. *Agricultural Systems*, 162:89-96

Meier *et al.* 2015. Environmental impacts of organic and conventional agricultural products – Are the differences captured by life cycle assessment? *Journal of Environmental Management*, 149: 192-208.

Pelletier *et al.* 2008. Scenario modeling potential eco-efficiency gains from a transition to organic agriculture: life cycle perspectives on Canadian canola, corn, soy, and wheat production. *Journal of Environmental Management*, 42(6):989-1001.

Seufert and Ramankutty 2017. Many shades of gray—The context-dependent performance of organic agriculture. *Science Advances,* 3(3) DOI: 10.1126/sciadv.1602638

Shade *et al.* 2021. Maximizing Carbon Sequestration in Organic Systems, The Organic Center Report. https://www.organic-center.org/sites/default/files/Soil/the_organic_center_carbon_sequestration.pdf

van der Werf *et al.* 2020 Towards better representation of organic agriculture in life cycle assessment. *Nature Sustainability*, 3: 419–425.

Wood *et al*. 2006 A comparative study of some environmental impacts of conventional and organic farming in Australia, *Agricultural Systems*, 89(2-3): 324–348.

Please do not hesitate to contact us for information on the data that we have been collecting or with questions you would like us to pose the research community.

On behalf of The Organic Center, I would like to extend my thanks to the National Organic Standards Board for your commitment to furthering organic agriculture.

Respectfully submitted,

Jessica Shade
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The Organic Center