



ORGANIC FARMING RESEARCH FOUNDATION

Fostering the improvement and widespread adoption of organic farming.

303 Potrero Street, Suite 29-201
Santa Cruz, CA 95060
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Secretary Tom Vilsack
U.S. Department of Agriculture
1400 Independence Ave, S.W.
Washington, DC 20250

Re: Request for Public Comment on the Climate-Smart Agriculture and Forestry Partnership Program (FR Number: 2021-0010).

Dear Secretary Vilsack,

Thank you for the opportunity to provide input and recommendations regarding USDA's proposed Climate-Smart Agriculture and Forestry Partnership Program (CSAFPP). The Organic Farming Research Foundation (OFRF, <https://ofrf.org>) appreciates the USDA's commitment to develop economically viable strategies to support farmers and ranchers to contribute to climate solutions while continuing to meet the nation's needs for food and other agricultural products.

OFRF works nationwide to foster the improvement and widespread adoption of organic farming systems through research, education, and federal policies that bring more farmers and acreage into organic production. Since 2014, OFRF has conducted an extensive review of USDA-funded organic agriculture research and summarized key findings in a series of Guidebooks on Soil Health and Organic Farming (available at <https://ofrf.org/research/reports/>). As the impacts of climate change have emerged as a top priority concern for organic and other producers, OFRF has published a soil health guidebook on *Organic Practices for Climate Mitigation, Adaptation, and Carbon Sequestration* and continues to advocate for federal policy and programmatic initiatives designed to help the nation's farmers and ranchers build agricultural resilience to the impacts of climate change, sequester carbon, and move US agriculture toward a net-zero greenhouse gas (GHG) footprint.

On behalf of the Organic Farming Research Foundation, we would like to submit the following comments on the Climate-Smart Agriculture and Forestry Partnership Program.

General recommendations

As a Represented Member of the National Sustainable Agriculture Coalition (NSAC) we fully endorse the recommendations for CSAFPP submitted by NSAC.

OFRF is in alignment with NSAC's responses to each of the seven questions listed in the Federal Register Notice. We urge USDA to give due consideration to NSAC recommendations regarding the use of the specific powers under the Commodity Credit Corporation (CCC) authority to integrate market-based efforts within existing USDA conservation programs to



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support holistic approaches that address soil, water, biodiversity, human health, and community resilience aspects of the climate crisis as well as agricultural carbon sequestration. We urge USDA to focus market-related efforts on developing fair, verifiable means for our best climate and resource stewards to market their products as CSAFPP-produced, and to utilize publicly funded venues, especially USDA conservation programs, to compensate farmers directly for carbon sequestration and other ecosystem services.

Finally, it is essential that the CSAFPP advance racial equity and take proactive steps to eliminate historical racial inequities. Products and benefits arising from the CSAFPP must effectively reach, support, and build the resilience of farmers and communities of color and other limited-resource and historically underserved populations. Thus, we appreciate USDA's strong emphasis on engaging Tribal leaders and agriculturists in its recently published Climate Adaptation and Resilience plan, and we urge USDA to give full consideration to all of the racial equity recommendations included in the NSAC comments.

We urge USDA to recognize organic agriculture as a climate-smart agricultural system, and to help organic farmers and ranchers realize their full potential to reduce their GHG footprint, sequester carbon, and enhance the climate resilience of their operations.

The organic method, as codified in the USDA National Organic Program (NOP) Standards, places a high priority on building and maintaining healthy, living soils through crop rotations, cover crops, organic amendments, careful tillage and nutrient management, and exclusion of synthetic fertilizers and crop protection chemicals from the production system. Research has shown that integrated systems of best organic practices build soil health, sequester carbon, reduce a farm's net greenhouse gas (GHG) footprint, and enhance resilience to drought, flood, and other weather extremes related to climate change (Schonbeck et al., 2018).

Nationwide and worldwide meta-analyses confirm that organically managed soils sequester larger amounts of carbon and maintain higher levels of biological activity and functional diversity that contribute to soil, crop, and livestock health and improve the resilience of the entire farming system to weather extremes and other stresses (Gattinger et al., 2012; Ghabbour et al., 2017; Lori et al., 2017). In several long-term farming systems trials, organic crop rotations have accrued significantly more soil carbon per year than conventional rotations, and in the ARS Beltsville, MD trial, the organic system outperformed conventional continuous no-till by nearly 400 lb soil C per acre annually (Cavigelli et al., 2013; Delate et al., 2015). Healthy, organically managed soils provide nitrogen (N) and other plant nutrients through biological processes and require far lower fertilizer inputs to maintain crop yields and long-term soil fertility (Bowles et al., 2017; Kloot, 2018). Nitrous oxide emissions from fertilized soils comprise half of total direct agricultural GHG emissions in the US, yet tightly coupled N cycling in tomato fields under best organic nutrient management can support high yields while maintaining soil nitrate-N levels low enough to eliminate nitrous oxide emissions (Bowles et al., 2015; Cai et al., 2016).

While organic certification offered through the NOP, administered by the USDA Agricultural Marketing Service, has historically been presented as a marketing opportunity offered by consumer demand for foods grown without the use of synthetic pesticides and fertilizers, it is clear from the research cited here that organic farming systems can play a key role in the nation's



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Climate Smart Agriculture and Forestry strategy. We are concerned that organic agricultural systems received only one passing mention in the USDA's otherwise excellent *Climate Smart Agriculture and Forestry Strategy 90 day Progress Report* (May 2021), and no mention at all in the *Action Plan for Climate Adaptation and Resilience* published in August 2021. We strongly urge USDA to recognize organic agriculture as a climate smart agricultural system and engage the organic sector as a major partner in developing a CSAF strategy, from research through practical application, education, and outreach.

With its emphasis on market-based approaches to helping producers adopt climate-mitigating and resilient systems and practices, the CSAFPP has an opportunity to elevate and support organic producers to adopt and improve climate-smart systems and to take a leadership role in promoting their widespread adoption. More and more consumers and buyers of organic agricultural products want to know that their purchases support climate mitigation and resilience, as well as procuring healthful food for their families and communities. Thus, the CSAFPP should work closely with NOP and the National Organic Standards Board (NOSB), the Natural Resources Conservation Service (NRCS), the regional Climate Hubs, and USDA organic research programs (Organic Research and Extension Initiative and Organic Transitions) to identify and promote best organic systems and practices for climate mitigation and resilience in each of the nation's major agro-ecoregions. Better understanding of how best organic agriculture practices can sequester carbon, curb GHG emissions, and improve agricultural and community resilience to weather shocks related to climate disruption can provide the basis for sound market-based approaches to promoting USDA certified organic products as CSAF-grown commodities.

Responses to specific questions in the Federal Register

2. In order to expand markets, what should the scope of the Climate-Smart Agriculture and Forestry Partnership Program be, including in terms of geography, scale, project focus, and project activities supported?

The CSAFPP should undertake a nationwide program that is tailored to each agricultural region's climates, soils, production systems, markets, and especially to the region-specific impacts of current and anticipated climate changes. Project focus must be on *systems*, and not individual practices, and should promote organic agriculture as a climate-smart production system. Research has shown over and over that the integrated impacts of systems of practices, such as cover crops, diversified rotations, organic soil amendments, and reduced tillage implemented together substantially improves soil carbon sequestration, soil health, and overall resilience, while single practices such as eliminating tillage or adding a winter cover crop to a conventional corn-soy rotation is far less effective in reducing a farm's net GHG footprint (Kane, 2015; Wander et al., 1994).

Similarly, transitioning farms to "organic by input substitution" (eliminating NOP-prohibited inputs to minimally meet enforceable NOP requirements) shows little promise for reducing net GHG emissions from agriculture (McGee, 2015). Thus, CSAFPP must focus on promoting *organic systems* as climate smart; indeed, the NOP requires organic producers to improve soil condition, prevent erosion, build biodiversity, and manage nutrients to avoid contamination of



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crops, soil, and water – all vital components of climate smart agriculture. The new program should highlight organic farming that meets the spirit as well as the letter of the NOP standards.

USDA should include organic agricultural systems in long-term farming systems studies in each of the Climate Hub regions. Climate Hubs can provide venues for translating research findings into best management practices and strategies and practical education, training, and technical assistance in climate smart and resilient agriculture for beginning, transitioning, and more experienced organic producers in each region.

Biodiversity and enterprise diversity are key aspects of organic systems. In addition to building agricultural resilience to both weather extremes and market fluctuations, diversified farming operations that serve local and regional markets have the potential to reduce GHG emissions related to food distribution and marketing, and to improve community food security. Finally, diversified farming systems sequester more carbon and build healthier soils than monocultures or low-diversity rotations. Many organic farms and ranches operate at a small to medium scale, serve local and regional markets, and could benefit from CSAFPP support in marketing their products as climate-friendly as well as healthful and free from synthetic agricultural inputs.

6. In order to expand markets, which CSAF practices should be eligible for inclusion?

As mentioned in response to question 2 above, OFRF strongly urges CSAFPP to consider organic farming and ranching systems that reflect the spirit as well as the letter of the NOP Standards as highly eligible CSAF practices. Furthermore, we emphasize that conservation systems, not individual practices, are needed to obtain substantial improvements in the net climate impact of an agricultural operation.

NOP-certified organic is one such system, and it is already backed by a legal definition with robust, tried-and-true federal standards and provisions for verification and enforcement. While the latter remain imperfect and serious concerns about fraudulently “organic” domestic and imported products have arisen in recent years, both legislative and administrative efforts have recently been initiated to address the threat of fraud and restore confidence in the organic label. These include the bi-partisan Continuous Improvement and Accountability in Organic Standards Act recently introduced in Congress, and USDA AMS proposed amendments to the USDA organic regulations to strengthen NOP oversight and enforcement. Implementing these measures will strengthen organic agriculture’s position as a CSAF system.

For both organic and non-organic approaches to climate-smart and resilient farming, we strongly urge the USDA to identify suites of practices that comprise whole farm systems or strategies, not single practices, as eligible for CSAF designation. These suites of practices provide consistent and lasting benefits in terms of net carbon sequestration, GHG mitigation, and resilience that no single practice can.

Finally, we urge the USDA to emphasize diversified perennial-based systems in its CSAF strategy. In addition to soil carbon, agroforestry, silvopasture, and other perennial based systems



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sequester carbon in plant biomass, improve nutrient cycling, help restore biodiversity, and otherwise enhance both resilience and climate mitigation.

7. How should ownership of potential GHG benefits that may be generated be managed?

Many of the climate benefits that arise from better farming, ranching, and land management practices – carbon sequestration, GHG mitigation, and community- and landscape-level climate resilience – are inherently a *public good*, which cannot be bought and sold through private markets without losing much of the net benefit to climate stability and food security. Therefore, considering the public nature of the imperative to conserve and restore our ecological commons, including climate stability as well as biodiversity, soil health, water quality, safety and quantity, and other ecosystem services on which the future survival of humanity depends, OFRF does not recommend that USDA engage in carbon markets. Instead, publicly funded conservation programs such as the CSP, EQIP, Regional Conservation Partnership Program, and Conservation Reserve Program, can and must be fine-tuned to provide optimal financial and technical support to producers in adopting Climate Smart Agriculture and Forestry systems that effectively reduce the net GHG footprint of US agriculture to zero by the year 2050. Enhancing support for organic and transitioning organic producers through these and other conservation programs is an important part of USDA’s CSAF strategy.

Thank you very much for the opportunity to provide input on the USDA’s CSAFPP.

Sincerely,

Brise Tencer
Executive Director

Trevor Findley,
Senior Policy Associate

Mark Schonbeck
Research Program

References

Bowles, T. M., A. D. Hollander, K. Steenwerth, and L. E. Jackson. 2015. Tightly-Coupled Plant-Soil Nitrogen Cycling: Comparison of Organic Farms across an Agricultural Landscape. PLOS ONE peer-reviewed research article.
<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0131888>.

Cai, Z., S. Gao, A. Hendratna, Y. Duan, M. Xu, and B. D. Hanson. 2016. Key Factors, Soil Nitrogen Processes, and Nitrite Accumulation Affecting Nitrous Oxide Emissions. Soil Science Society of America Journal 80 (6): 1560-1571.



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Cavigelli, M. A., J. R. Teasdale, and J. T. Spargo. 2013. Increasing Crop Rotation Diversity Improves Agronomic, Economic, and Environmental Performance of Organic Grain Cropping Systems at the USDA-ARS Beltsville Farming Systems Project. Crop Management 12(1) Symposium Proceedings: USDA Organic Farming Systems Research Conference.

<https://dl.sciencesocieties.org/publications/cm/tocs/12/1>.

Delate, K., C. Cambardella, C. Chase, and R. Turnbull. 2015. A review of long term organic comparison trials in the US. Sustainable Agricultural Research 4(3): 5-14.

Gattinger, A., A. Muller, M. Haeni, C. Skinner, A. Fliessbach, N. Buchmann, P. Mader, M. Stolze, P. Smith, N. E. Scialabba, and U. Niggli. 2012. Enhanced top soil carbon stocks under organic farming, Proceedings of the National Academy of Sciences 109 (44) 18826-18231.

Ghabbour, E. A., G. Davies, T. Misiewicz, R. A. Alami, E. M. Askounis, N. P. Cuzzo, A. J. Filice, J. M. Haskell, A. K. Moy, A. C. Roach, and J. Shade. 2017. National Comparison of the Total and Sequestered Organic Matter Contents of Conventional and Organic Farm Soils. Advances in Agronomy 146: 1-35.

Kane, D. 2015. Carbon sequestration potential on agricultural lands: a review of current science and available practices. Breakthrough Strategies and Solutions and National Sustainable Agriculture Coalition. <http://sustainableagriculture.net/publications>. 35 pp.

Kloot, Robin. 2018. Using adaptive nutrient management to answer “how much fertilizer do you actually need?” NRCS webinar May 8, 2018. Science and Technology Training Library, <http://www.conservationwebinars.net/listArchivedWebinars>.

Lori, M., S. Symnaczik, P. MaEder, G. De Deyn, A. Gattinger. 2017. Organic farming enhances soil microbial abundance and activity – A meta-analysis and meta-regression. PLOS ONE | <https://doi.org/10.1371/journal.pone.0180442>. July 12, 2017, 25 pp.

McGee, J.A., 2015. Does certified organic farming reduce greenhouse gas emissions from agricultural production? Agric. Hum. Values 32, 255–263.

Schonbeck, M. D. Jerkins, and L. Snyder. 2018. Soil Health and Organic Farming: Organic Practices for Climate Mitigation, Adaptation, and Carbon Sequestration. Organic Farming Research Foundation. 78pp. <https://ofrf.org/research/reports/>.

Wander, M. M., S. J. Traina, B. R. Stinner, and S. E. Peters. 1994. Organic and Conventional Management Effects on Biologically Active Soil Organic Matter Pools. Soil Sci. Soc. Am. J. 58:1130-1139.