Dear Mr. Holstein,

Thank you for inviting comment on the development of a United States Department of Agriculture (USDA) climate-smart agriculture and forestry strategy. The Environmental Working Group (EWG) has been working with scientists and organizations throughout the country to understand the current state of science and on-the-ground activities relating to carbon sequestration, greenhouse gas mitigation and adaptation on agricultural lands, as well as to ensure that agriculture and climate policies provide just and equitable solutions to problems disproportionately affecting people of color and low-income communities. EWG offers the following comments on the specific topics identified in USDA's request for comment.

Section 1. Climate-smart agriculture and forestry questions

Although agriculture contributes 9.3 percent of U.S. greenhouse gas emissions,[1] sound science does not support looking to agricultural lands for consequential, swift, low cost or lasting reductions in greenhouse gas emissions. At present, uncertain science presents a foundational barrier to increasing programming designed solely to support carbon sequestration on agricultural lands. Scientists are still developing methods to measure carbon sequestration accurately, and the timeline for finalizing these methodologies does not align well with USDA's goal of immediately ramping up investment in carbon sequestration programming. Additionally, even when soil sampling and testing methodologies have been finalized, measurement at a scale and frequency necessary for sound verification will likely prove to be cost-prohibitive.

Scale also presents a significant consideration for USDA in its development of a climate-smart agriculture strategy. Modeled estimates project that sequestration and emissions reductions from planting cover crops on 217 million more acres, improving nutrient management on all acres, and applying fertilizer and improving manure management on all larger dairy and hog operations amount to maximum greenhouse gas reductions equivalent to approximately 3 percent of U.S emissions.[2] This scale of best management practices implementation far exceeds anything that has been achieved through decades of voluntary agricultural conservation programs, which have allocated hundreds of billions of dollars to farmers. Conservation regulations, broadly known as conservation compliance, are the only agriculture policies that have achieved a similar level of implementation over a 10-year period.

In addition, an upcoming EWG survey using satellite and aerial imagery of cover crop use in Illinois, Indiana and Iowa reveals that ensuring cover crops are used continuously will also be a challenge. Between 2017 and 2019, a 50 percent increase in cover crop adoption was almost entirely offset by a 47 percent loss in cover crops on previously protected acres.

Carbon prices needed to promote scaled implementation compound the challenge. Fargione et al. 2018 estimates conclude that a carbon price of $100 per ton – three to four times the $20 per ton existing private markets are offering – will be needed to achieve the maximum greenhouse gas emissions

[1] Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2018.
[2] Fargione J.E. et al., Natural climate solutions for the United States. Sci. Adv. 2018, 4.

reductions cited earlier.[3] Rather than focusing on carbon markets, USDA should make better use of existing conservation programs. In particular, USDA should prioritize EQIP and CSP practices that reduce nitrous oxide and methane emissions and should increase investments in programs like CREP and CLEAR30, which provide resources for long-term land restoration.

Taking into account scientific uncertainty surrounding measurement and verification, the challenges of scale and maintenance, and cost-prohibitive pricing for carbon sequestration, a sound approach for USDA's climate-smart agriculture strategy would also focus on helping farmers make their land more resilient in the face of certain climate change, including increased rainfall and droughts, which will exacerbate known and imminent environmental challenges. Many of the practices that may marginally reduce emissions or sequester carbon also make our farms better able to withstand the severe weather caused by climate change.

Successful on-the-ground market initiatives, including the Soil and Water Outcomes Fund (SWOF),[4] demonstrate that precision siting and stacking of environmental outcomes provide a strong approach to incentivizing farmers and improving the resiliency of agricultural farmland. The SWOF stacks carbon benefits (at a price of up to $45 per acre), with additional payments for improved water outcomes, and has seen solid growth in farmer engagement and improved water and climate outcomes. Through additional funding and improved measurement, tracking and maintenance of precision practices, USDA's climate-smart agriculture strategy could provide badly needed water quality improvements and flood reduction benefits while also providing supplementary greenhouse gas reductions. Although the greenhouse gas benefits of these practices have proven hard to verify and measure, many practices funded through CSP and EQIP that may reduce nitrous oxide emissions can also produce significant water quality benefits (see attachment).

Section 2. Biofuels, wood and other bioproducts, and renewable energy questions

USDA's climate-smart agriculture strategy should emphasize truly renewable energy sources, such as wind and solar, not prioritize the production of biogas from methane digesters, which produce much larger greenhouse gas emissions than renewable energy sources like geothermal, wind and solar.[5] Burning the biogas generated by digesters not only produces carbon dioxide, a greenhouse gas, but also releases chemicals that are serious air pollutants, like particulate matter, sulfur and nitrogen oxides, and carbon monoxide.[6] Moreover, biogas and manure leaks are common from digesters – some estimates show 2 to 3 percent of methane produced by digesters leaks into the atmosphere.[7]

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[3] Fargione J.E. et al., Natural climate solutions for the United States. Sci. Adv. 2018, 4.
[4] Soil and Water Outcomes Fund.
[5] Bruckner T., I. A. Bashmakov, Y. Mulugetta, H. Chum, A. de la Vega Navarro, J. Edmonds, A. Faaij, B. Fungtammasan, A. Garg, E. Hertwich, D. Honnery, D. Infield, M. Kainuma, S. Khennas, S. Kim, H. B. Nimir, K. Riahi, N. Strachan, R. Wiser, and X. Zhang, 2014: Energy Systems. In: Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Edenhofer, O., R. Pichs-Madruga, Y. Sokona, E. Farahani, S. Kadner, K. Seyboth, A. Adler, I. Baum, S. Brunner, P. Eickemeier, B. Kriemann, J. Savolainen, S. Schlömer, C. von Stechow, T. Zwickel and J.C. Minx (eds.)]. Cambridge University Press, Cambridge, U.S. and New York. https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_chapter7.pdf, page 539
[6] Energy Justice Network. https://www.energyjustice.net/digesters
[7] Energy Justice Network. https://www.energyjustice.net/digesters

Although biodigesters reduce methane emissions from manure, they do nothing to reduce the largest source of methane emissions from livestock, which is enteric methane.[8] Additionally, digesters may encourage growth in unsustainable manure production from animal feeding operations. Pasture-raised livestock contribute negligible amounts of manure methane emissions,[9] and manure methane is produced only when manure is stored in large quantities. By supporting the growth of unsustainable animal feeding operations, biodigesters may also increase nutrient loads, which are fueling drinking water contamination and algae blooms across the country.[10]

Increasing financial support for biodigesters may also exacerbate already inequitable USDA funding disparities. Since digesters require a large amount of manure, government funding is skewed toward larger farms. EPA considers farms to be potential candidates for digesters if those farms have at least 500 cattle or 2,000 hogs.[11]

Digesters are not a cost-effective source of electricity. They are expensive to build, operate and maintain,[12] and the electricity they generate costs a lot more than electricity from other sources. According to researchers at the University of Minnesota, "current U.S. average electricity prices do not appear to provide sufficient economic justification for digesters to move beyond a fairly limited niche."[13]

Finally, USDA's climate-smart agriculture strategy should not focus on digesters because they have high failure and breakdown rates and represent a high-risk, low-benefit investment. Digesters have many engineering and technical issues, and farmers do not always have the technical skills, knowledge, money or time to fix them.[14] According to the EPA's AgSTAR digester database, there are 419 digesters listed in the U.S. Of those, 333 were in operation or under construction as of September 2020, and 86 digesters – 20.5 percent of the total – have shut down since 2000.[15]

Section 4. Environmental justice and questions about disadvantaged communities

Justice and equity must be at the center of USDA's climate-smart agriculture strategy. USDA has a long history of sending the majority of farm payments, through farm subsidy and conservation programs, to

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[8] Grossi, G. et. al. Livestock and climate change: impact of livestock on climate and mitigation strategies. https://academic.oup.com/af/article/9/1/69/5173494

[9] Koneswarn, G. and D. Nierenberg. 2008. Global Farm Animal Production and Global Warming: Impacting and Mitigating Climate Change. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2367646/#:~:text=In%20contrast%2C%20cattle%20raised%20on,methane%20(U.S.%20EPA%201998).&text=Farm%20animal%20manure%20is%20the,2006).

[10] Nkoa, R. 2013. Agricultural benefits and environmental risks of soil fertilizations with anaerobic digestates: a review. Agronomy for Sustainable Development 34, 473-492 (2014). https://link.springer.com/article/10.1007/s13593-013-0196-z

[11] U.S. Environmental Protection Agency. Is Anaerobic Digestion Right for Your Farm? https://www.epa.gov/agstar/anaerobic-digestion-right-your-farm

[12] Agstar. 2012. Funding On-Farm Anaerobic Digestion. https://www.epa.gov/sites/production/files/2014-12/documents/funding_digestion.pdf

[13] Nkoa, R. 2013. Agricultural benefits and environmental risks of soil fertilizations with anaerobic digestates: a review. Agronomy for Sustainable Development 34, 473-492 (2014).https://experts.umn.edu/en/publications/farm-based-anaerobic-digesters-as-an-energy-and-odor-control-tech

[14] Congressional Research Service. 2011. Anaerobic Digestion: Greenhouse Gas Emission Reduction and Energy Generation. https://www.everycrsreport.com/reports/R40667.html#_Toc311474870

[15] U.S. Environmental Protection Agency, AgSTAR. Livestock Anaerobic Digester Database. https://www.epa.gov/agstar/livestock-anaerobic-digester-database

the largest and often wealthiest farms. This exacerbates severe income inequality between large and small farms, and also favors white farmers over farmers of color, who are more likely to operate small farms.[16] Through its farm subsidy and loan programs, USDA also has a decades-long history of discriminating against Black farmers.[17] Any new funding dedicated to promoting climate-smart agriculture must make a priority of small farms, as well as farmers of color.

Due to uncertain science and other considerations included in EWG's comments on Section 1, as well as the potential to exacerbate disproportionate impacts on low-income communities and communities of color, USDA's climate-smart agriculture policy should avoid focusing on the creation of a carbon offset market. Greenhouse gas offset markets across the globe present significant environmental justice problems. When polluting companies purchase offsets, they continue polluting where they are located. Climate polluters such as power plants[18] are often located near communities of color and communities that are low-income.[19] USDA cannot create a market for greenhouse gas emissions unless it is able to ensure trading will not disproportionately harm communities of color or low-income communities.

Lastly, USDA's climate-smart agriculture strategy must focus on protecting rural communities, especially as the department weighs proposals for increased use of biodigesters. Although specially designed digesters in southern Wisconsin have helped address nutrient pollution from manure, they have also demonstrated the potential for significant and harmful localized impacts, including air pollution, methane leaks, manure spills and even explosions. Rural communities have also failed to realize taxes and other promised monetary benefits from digester operations.[20]

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[16] Environmental Working Group. Trump's Farm Bailout Program Continues USDA's Racist Legacy. https://www.ewg.org/news-insights/news/trumps-farm-bailout-program-continues-usdas-racist-legacy

[17] Environmental Working Group. Timeline: Black Farmers and the USDA, 1920 to Present. https://www.ewg.org/research/black-farmer-usda-timeline/

[18] NAACP. Coal Blooded. https://www.naacp.org/climate-justice-resources/coal-blooded/

[19] Cushing, L.J. 2016. A Preliminary Environmental Equity Assessment of California's Cap-and-Trade Program. https://dornsife.usc.edu/PERE/enviro-equity-CA-cap-trade

[20] A $12 million digester in Dane County, Wis., that received more than $3 million from state funds had three major manure leaks in three years, spilling over 400,000 gallons of manure. It was also the site of an explosion that blew the lid off the digester. The company that owned the digester also failed to pay $55,000 for road improvements and in lieu payments for property taxes to the nearby town of Vienna. http://archive.jsonline.com/news/statepolitics/state-financed-manure-digester-plagued-by-spills-explosion-b99435123z1-290263421.html, https://madison.com/ct/news/local/writers/mike_ivey/report-dane-county-manure-digester-a-huge-fiasco/article_5ae90bd0-c2e6-55a8-8898-b9483e239be3.html