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CLIMATE-SMART AGRICULTURE CERTIFICATION: A CALL FOR FEDERAL ACTION

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Agriculture systems are extremely susceptible to the consequences of climate change. Extreme weather events, changing temperature patterns, and invasive pests and weeds threaten our nation's crop yields and food security. U.S. agriculture is also a leading contributor to climate change, as industrial farming and land management practices emit around a third of nationwide greenhouse gases. Certain climate-friendly agriculture practices have the potential to combat climate change by sequestering carbon and reducing emissions. Despite this opportunity, current federal farming policies, heavily influenced by "big-ag" lobbyists and consolidated farming industries, do not incentivize such "climate-smart" agriculture practices.

This Comment proposes a federal climate-smart certification program for producers who use such practices. In comparison to USDA organic certification, where the government responded to fears about pesticide and synthetic fertilizer use by creating a trustworthy indicator for organic producers, it asks Congress to now take action to identify those producers who practice climate-smart agriculture and to catalyze a widespread transition through Farm Bill policy. It argues that certification would standardize climate-smart agriculture throughout the United States by establishing minimum best practices, assuring consumers of the truthfulness of producers' environmental claims, and incentivizing farmers through government subsidies and benefits. A USDA-enforced seal could create a lucrative and environmentally sustainable market for climate-smart commodities. With government support, consumer buy-in, and broad farmer adoption, U.S. agriculture could in fact combat climate change, rather than exacerbate it.

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INTRODUCTION

Agriculture covers fifty-two percent of the landmass of the United States.[1] Unfortunately, agricultural land is a primary driver of climate change.[2] Agriculture practices emit (1) nitrous oxide, through excess fertilizer application and soil breakdown; (2) carbon dioxide, through on-farm energy use and food waste in landfills; (3) soil carbon, through tillage and conversion of native grasslands and forests to cropland; and (4) methane, through field burning of crop residues and manure management activities.[3] Food systems are also highly vulnerable to the consequences of climate change. Crop yields are threatened by extreme weather events, such as floods and wildfires, caused by alterations in temperature patterns, while the proliferation of pests, weeds, and diseases continues to jeopardize food security.[4] But this vicious cycle is not the inevitable outcome. Instead, agricultural land could serve as a carbon sink: reducing emissions and preventing climate change.[5] To capture this potential, more farms must adopt "climate-smart" practices, such as rotational planting, cover cropping, agroforestry, nutrient management, and no-till farming.[6] These

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1. Peter H. Lehner & Nathan A. Rosenberg, Farming for Our Future: The Science, Law, and Policy of Climate-Neutral Agriculture 37 (2021).

2. H. Select Comm. on the Climate Crisis, 116th Cong., Solving the Climate Crisis, Majority Staff Report 339 (2020) [hereinafter House Climate Report]; see also Sources of Greenhouse Gas Emissions, EPA, https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions [https://perma.cc/QFV4-XLA9] (last visited Feb. 4, 2022) (noting that U.S. agricultural production is a net emitter of greenhouse gas emissions—creating more greenhouse gas emissions than it captures).

3. Lehner & Rosenberg, supra note 1, at 39–43.

4. Int'l Food Pol'y Rsch. Inst., Climate Change: Impact on Agriculture and Costs of Adaptation, at vii (2009), https://ebrary.ifpri.org/utils/getfile/collection/p15738coll2/id/130648/filename/130821.pdf [https://perma.cc/9KUW-RKVY].

5. Jeff Schahczenski & Holly Hill, ATTRA—Nat'l Sustainable Agric. Info. Serv., Agriculture, Climate Change and Carbon Sequestration 5 (2009), https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs141p2_002437.pdf [https://perma.cc/GG2H-4BSQ]; see also Georgina Gustin, John H. Cushman, Jr. & Neela Banerjee, How the Farm Bureau's Climate Agenda Is Failing Its Farmers, Inside Climate News (Oct. 24, 2018), https://insideclimatenews.org/news/24102018/farm-bureau-climate-change-denial-farmers-crop-insurance-subsidies-drought-future-at-risk/ [https://perma.cc/2SWD-RJCS] (noting that an all-out soil restoration campaign could absorb half of American agriculture's carbon footprint).

6. The term "climate-smart agriculture" has been adopted by the United Nations, the World Bank, and USDA's Climate Hubs, among other organizations. See, e.g., Anthony Buda, The Role of Climate-Smart Agriculture in Climate Adaptation and Mitigation in the Northeast, Climate Hubs USDA, https://www.climatehubs.usda.gov/hubs/northeast/topic/role-climate-smart-agriculture-climate-adaptation-and-mitigation-northeast [https://perma.cc/GJ4F-ZAZ7] (last visited Feb. 4, 2022); Climate-Smart Agriculture, Food & Agric. Org. of the U.N., https://www.fao.org/climate-smart-agriculture/en/ [https://perma.cc/9JCL-BJX2] (last visited Feb. 4, 2022); Climate-Smart Agriculture, World Bank, https://www.worldbank.org/en/topic/climate-smart-agriculture [https://perma.cc/46U5-ZK32] (last updated Apr. 5, 2021).

agricultural methods sustainably increase agricultural productivity, build resilience to climate change, and reduce greenhouse gas emissions.[7]

Currently, existing government policies do not incentivize, and sometimes even deter, the adoption of climate-smart agriculture practices. To reverse this trend, this Comment proposes a climate-smart certification for producers who use such practices. Similar to U.S. Department of Agriculture (USDA) organic certification, where the government responded to fears about pesticide and synthetic fertilizer use by creating a trustworthy indicator for organic producers, Congress should now take action to identify those producers who practice climate-smart agriculture. With government support, consumer buy-in, and widespread farmer adoption, U.S. agriculture could actually combat climate change, rather than exacerbate it.

Congress should adopt a climate-smart agriculture certification act in the upcoming 2023 Farm Bill.[8] Through federal legislation, certification would standardize climate-smart agriculture across the United States by establishing minimum best practices, assuring consumers of the truthfulness of producers' environmental claims, and incentivizing farmers with government subsidies and benefits. A USDA-enforced seal could create a lucrative and environmentally sustainable market for climate-smart commodities.[9]

This Comment outlines a proposal for federal legislation. It begins by considering the opportunities presented by a climate-smart certification, as well as the barriers to success of such a program. It then evaluates other certification models to glean lessons for a federal climate-smart certification. Next, this Comment proposes federal legislation to establish baseline climate-smart standards, a board of stakeholders to influence subsequent regulations, and a program to implement and enforce those standards. Finally, it concludes by evaluating the feasibility of this recommendation and considering possible alternatives in the private sector and at the state level.

I. FRAMING THE PROBLEM

Active participation throughout the supply chain is necessary to effectuate a climate-smart certification. This Part introduces the market forces,

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7. House Climate Report, supra note 2, at 340.

8. The Farm Bill is a package of legislation that is passed once every five years, covering the Supplemental Nutrition Assistance Program (SNAP) as well as almost all agriculture-related policies. President Trump's 2018 Farm Bill is set to expire in 2023. See What Is the Farm Bill?, Nat'l Sustainable Agric. Coal., https://sustainableagriculture.net/our-work/campaigns/fbcampaign/what-is-the-farm-bill/ [https://perma.cc/3L6C-W4LD] (last visited Feb. 4, 2022).

9. See infra notes 54–55 (noting that certified organic foods have a substantial retail price premium relative to their nonorganic counterparts).

both consumer- and producer-centric, that may advantage a federal climate-smart certification or may hinder it.

A. *Opportunities for Climate-Smart Certification*

1. *Market-Based Incentives.* — Federal climate-smart certification would provide a verifiable designation for climate-smart products and create market opportunities. As more companies prioritize carbon neutrality and climate change–related initiatives,[10] a climate-smart supply chain has become essential to achieving sustainability targets. Indeed, many companies set carbon reduction and environmental sustainability goals based on industry certifications. For instance, in 2020, the French restaurant-rating company Michelin introduced the Green Star, awarded to restaurants who commit to sustainable gastronomy.[11] These restaurants and many businesses committed to reducing their carbon footprint could similarly rely on a USDA-backed climate-smart certification to make their sourcing and production decisions.

Certification reduces both information and transaction costs for consumers and businesses who want to engage with producers that have a lower impact on the environment. A climate-smart label would affirm that a government third party has inspected and audited the agriculture practices of the producer to ensure positive environmental impact. Such a label would communicate to consumers that they can trust a company's climate-related claims. Consumers exhibit more willingness to pay for products that they can identify as environmentally friendly,[12] allowing farmers and companies to charge a premium to help offset the costs of transitioning to climate-smart practices. As a result, farmers would be incentivized to achieve certification, increasing the options and accessibility of climate-

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10. Blake Morgan, 101 Companies Committed to Reducing Their Carbon Footprint, Forbes (Aug. 26, 2019), https://www.forbes.com/sites/blakemorgan/2019/08/26/101-companies-committed-to-reducing-their-carbon-footprint/?sh=3560290f260b (on file with the *Columbia Law Review*) (providing a list of companies committed to reducing their carbon footprint).

11. Jaxx Artz, 14 Restaurants Around the World Doing Incredible Things for Sustainability, Glob. Citizen (July 15, 2021), https://www.globalcitizen.org/en/content/restaurant-sustainable-zero-waste-vegan-vegetarian/ [https://perma.cc/E762-44AH].

12. Consumers Rank Convenience & Fuel Retailers Low in Demonstrating Commitment to Environmental Friendliness, Convenience Store News (Apr. 1, 2021), https://csnews.com/consumers-rank-convenience-fuel-retailers-low-demonstrating-commitment-environmental-friendliness [https://perma.cc/5826-VFWV] (describing study results finding that almost two-thirds of Americans are willing to pay more for sustainable products and that 78% are more likely to purchase a product that is clearly labeled as environmentally friendly); see also Recent Study Reveals More Than a Third of Global Consumers Are Willing to Pay More for Sustainability as Demand Grows for Environmentally-Friendly Alternatives, Bus. Wire (Oct. 14, 2021), https://www.businesswire.com/news/home/20211014005090/en/Recent-Study-Reveals-More-Than-a-Third-of-Global-Consumers-Are-Willing-to-Pay-More-for-Sustainability-as-Demand-Grows-for-Environmentally-Friendly-Alternatives [https://perma.cc/JAE4-WRRB] (noting the generational differences in willingness to pay more for sustainable products and services).

smart products for environmentally conscious consumers. As the signaling effect of a climate-smart certification builds, companies and farmers may face pressures from consumers and counterparts throughout the supply chain to adopt such practices in order to remain competitive.[13] The climate-smart certification would set a new standard for sustainable practices, and adjacent industries would be incentivized to innovate more economical and effective methods of achieving carbon neutrality.

2. *Consumer Choice.* — Federal climate-smart certification would provide a definitive standard for consumers to evaluate climate claims. When attempting to make environmentally friendly choices, consumers tend to rely on direct indicators such as organic seals.[14] Currently, however, there are hundreds of different privately organized environmental certifications and labels that producers can adopt to market their products.[15] This "label overload" confuses buyers and obfuscates positive environmental impacts with misleading and untrustworthy claims. Some certifications are verified by a third party that is financially independent of the outcome of the certification decision, but others stem from a second- or first-party source that has a material interest in the certification.[16] Consumers struggle to distinguish between such certifications, and independent oversight often reveals false or misleading "green" marketing.[17] Lawsuits alleging "greenwashing," the deceptive use of advertising and labels to promote a false perception that a company's policies or products are environmentally friendly, have spanned industries. Scandals include Coca-Cola's identification of its products as "sustainable and environmentally friendly," while generating more plastic pollution than any other company worldwide, and Volkswagen and Audi's use of emissions-cheating software to advertise their diesel vehicles as "clean and environmentally friendly."[18] Consumers pay attention to corporate actions: A "majority of people have doubts

13. See Verónica H. Villena & Dennis A. Gioia, A More Sustainable Supply Chain, Harv. Bus. Rev., Mar.–Apr. 2020, https://hbr.org/2020/03/a-more-sustainable-supply-chain [https://perma.cc/G3C4-S8NN] (explaining how corporations' pledges to work with suppliers that adhere to social and environmental standards can create a "cascade of sustainable practices" throughout the supply chain, but noting practical difficulties).

14. Christina Hartmann, Gianna Lazzarini, Angela Funk & Michael Siegrist, Measuring Consumers' Knowledge of the Environmental Impact of Foods, Appetite, Dec. 1, 2021, at 1, https://www.sciencedirect.com/science/article/pii/S0195666321005298 [https://perma.cc/5LAX-T6CF].

15. Luz Aída Martínez Meléndez, Comm'n for Env't Coop., Environmental Labels in North America: A Guide for Consumers 8 fig.3, 9 fig.4, 10 fig.5 (2009) http://www3.cec.org/islandora/en/item/4352-environmental-labels-in-north-america-guide-consumers-en.pdf [https://perma.cc/ND5C-935D] (providing a consumer guide to over 250 environmental labels used in North America).

16. Id. at 4.

17. See Earth Day 2021: Companies Accused of Greenwashing, Truth in Advertising (Apr. 19, 2021), https://www.truthinadvertising.org/six-companies-accused-greenwashing/ [https://perma.cc/L6VS-NZ2J] (listing allegations of false or misleading environmentally-friendly marketing).

18. Id.

when companies say they are environmentally friendly, with 53% of Americans never or only sometimes believing such claims. To trust a company statement, 45% of Americans say they need a third-party validating source."[19]

Yet without labels consumers have no easy way to determine the environmental impacts of their choices. To find out the environmental impact of a single bottle of ketchup, for instance, a consumer would need to consider: (1) the agricultural production of each ingredient, and whether the producers used pesticides, tilled their fields, and engaged in other environmentally harmful practices; (2) the secondary production entailing carbon emissions from shipping and packaging; (3) the ultimate consumption of the product; and (4) whether it ends up with the other 108 billion pounds of food waste per year in the United States.[20] Even if a consumer made it to the first step and identified the farm where the ingredients were grown, "ag-gag" laws, which ban or restrict recording at industrialized farming operations in some states, may prevent access to reliable information regarding the farm's practices.[21] In short, it would be impossible for a consumer to determine the environmental impact of a product without third-party verification throughout the supply chain.

Informed choice by way of a climate-smart certification empowers individuals to consume more sustainably and would facilitate changes in market-wide behavior. For consumers, a climate-smart seal would verify that the farmer who produced the product is subject to federal auditing, oversight, and monitoring. Companies buying from certified farmers could also then effectively and honestly market their products as climate-safe, relying on third-party verification to promote consumer trust.

USDA has the reach and national audience necessary to educate consumers about the certification's meaning and influence buying patterns.[22]

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19. GreenPrint Survey Finds Consumers Want to Buy Eco-Friendly Products, but Don't Know How to Identify Them, Bus. Wire (Mar. 22, 2021), https://www.businesswire.com/news/home/20210322005061/en/GreenPrint-Survey-Finds-Consumers-Want-to-Buy-Eco-Friendly-Products-but-Don't-Know-How-to-Identify-Them [https://perma.cc/3S4B-9G9J].

20. The ketchup example is found here: Heather Benz, The Impact of Your Grocery Store Choices: Nitty-Gritty, Stanford Mag., July–Aug. 2009, https://stanfordmag.org/contents/the-impact-of-your-grocery-store-choices-nitty-gritty [https://perma.cc/U7HC-YAPM]; see also How We Fight Food Waste in the US, Feeding Am., https://www.feedingamerica.org/our-work/our-approach/reduce-food-waste [https://perma.cc/R7E6-7VRR] (last visited Feb. 7, 2022).

21. Alicia Prygoski, Brief Summary of Ag-Gag Laws, Animal Legal & Hist. Ctr. (2015), https://www.animallaw.info/article/brief-summary-ag-gag-laws [https://perma.cc/DHB5-4L4J].

22. Klaus G. Grunert, Sophie Hieke & Josephine Wills, Sustainability Labels on Food Products: Consumer Motivation, Understanding and Use, 44 Food Pol'y 177, 178 (2014), https://www.sciencedirect.com/science/article/pii/S0306919213001796 [https://perma.cc/8FA6-LV5L] (noting that knowledge about the standards that labels are based on and their effectiveness, as well as reputation and social pressure amongst peers, can play a role in influencing purchase decisions).

For example, USDA almost entirely created the market for milk, beginning with its first public-health nutrition campaign that lauded milk as a "miracle cure, a rite of passage, and . . . a means to support the troops in World Wars I and II."[23] Federal intervention continues today with price supports that maintain a minimum price for milk and $3.5 billion in direct payments, subsidies, and bailouts for dairy producers from USDA in 2020 alone.[24] If USDA diverted even a portion of those funds away from the particularly environmentally harmful dairy industry, which accounts for two percent of *total* U.S. greenhouse gas emissions,[25] and toward research, support, and promotional programs for climate-smart products, consumer awareness and interest would increase.[26]

Of course, it does not necessarily follow that because a consumer knows what it means to be climate friendly, their consumption choices will align. Beyond understanding food's environmental impact, "diverse motivational and practical barriers ranging from price, to negative taste expectations, to low [availability] might prevent consumers from buying the environmentally friendly option."[27] Regardless, awareness of the destructive climate effects of agriculture is the first step toward shifting consumer demand.[28] A federal certification would make climate-smart commodities more widely available and easier to distinguish in the market.

3. *Farmer Choice.* — Widespread adoption of sustainable practices by farmers requires both concrete financial incentives and government support. Agricultural operations decisions are complex, and they depend on many factors including government program conditions, incentives offered, personal perspectives regarding conservation measures, experience and education, access to economic opportunities, and characteristics of a farmer's land and environment. Yet direct economic benefits are the essential condition for adoption of conservation practices and other farmer behaviors.[29] This insight has informed much of U.S. agriculture's history.

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23. Emily Moon, What Will the U.S. Government Do With 1.4 Billion Pounds of Cheese?, Pac. Standard (Jan. 10, 2019), https://psmag.com/economics/what-will-the-us-government-do-with-1-4-billion-pounds-of-cheese [https://perma.cc/3K9Q-UBSJ].

24. Sally Ho, U.S. Animal Agriculture Subsidies Soared in 2020 Despite Climate & Health Damage, Green Queen (Apr. 16, 2021), https://www.greenqueen.com.hk/us-animal-agriculture-subsidies-soared-in-2020-despite-climate-health-damage/ [https://perma.cc/GF9X-Z53V] (last updated Oct. 6, 2021).

25. Milk's Impact on the Environment, World Wildlife Mag., Winter 2019, https://www.worldwildlife.org/magazine/issues/winter-2019/articles/milk-s-impact-on-the-environment [https://perma.cc/79US-VEN6].

26. See Katherine Ralston, USDA, How Government Policies and Regulations Can Affect Dietary Choices 332, https://www.ers.usda.gov/webdocs/publications/42215/5848_aib750q_1_.pdf [https://perma.cc/8SGB-6F6V] (last visited Feb. 7, 2022) (explaining the relative success of government marketing and advertising for certain commodities).

27. Hartmann et al., supra note 14, at 8.

28. Id. at 11.

29. Valeria Piñeiro, Joaquín Arias, Jochen Dürr, Pablo Elverdin, Ana María Ibáñez, Alison Kinengyere, Cristian Morales Opazo, Nkechi Owoo, Jessica R. Page, Steven D. Prager

Federal policy has been characterized by subsidization since the New Deal era, through direct payments, price protections, coverage of crop insurance, and commodity subsidies to farmers. Beyond creating economic distortions, trade conflicts, and inequities, these policies pay farmers to harm the environment and protect them from the economic consequences of climate change. Subsidies have been shown to: (1) cause overproduction, which draws lower-quality farmlands or native grasslands into agriculture use; (2) encourage farms to expand production on highly erodible land; (3) induce excessive use of fertilizer and pesticides on marginal lands, causing water contamination; and (4) discourage crop rotation in favor of planting only a subsidized crop, leading to degradation of the soil.[30] Conversely, government policies have the unique ability to reverse course through linkage of certain government benefits to climate-smart certification. If the government researches, incentivizes, and financially supports climate-smart practices, action from farmers will follow. Private certification programs, while laudable, cannot provide inducements in the scale necessary to fundamentally change farmer behavior.

Adoption of climate-smart practices becomes less daunting with robust government support and benefits. For instance, certified producers could receive concessionary loan rates on purchases for land, infrastructure, and equipment; crop insurance discounts; and preference for federal procurement contracts. Beyond economic incentives, a federal certification would create clear standards regarding what constitutes a climate-smart practice for farmers. Rather than disentangling conservation practices that are currently supported by the Natural Resources Conservation Service (NRCS) (the federal agency that provides technical assistance to farmers to protect their natural resources) from those that threaten a farmer's eligibility for crop insurance,[31] a transparent certification process provides direct instruction. Both localized technical assistance in implementing climate-smart practices and dependable relationships between

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& Maximo Torero, A Scoping Review on Incentives for Adoption of Sustainable Agricultural Practices and Their Outcomes, 3 Nature Sustainability 809, 815 (2020), https://www.nature.com/articles/s41893-020-00617-y.pdf [https://perma.cc/W7NN-73K6].

30. Scott Lincicome, Examining America's Farm Subsidy Problem, Cato Inst. (Dec. 18, 2020), https://www.cato.org/commentary/examining-americas-farm-subsidy-problem [https://perma.cc/4CUS-365W] (noting that the crop insurance "government backstop encourages farmers to engage in riskier behavior . . . *and* discourages them from engaging in practices . . . that would protect them 'from the very losses they end up needing crop insurance to recoup'" (quoting Jessica McKenzie, What Happens If We Eliminate Crop Insurance Altogether?, Counter (Sept. 19, 2019), https://thecounter.org/eliminate-crop-insurance-subsidies-regenerative-ag/ [https://perma.cc/L8Z3-H28L])).

31. See Roger Claassen & Maria Bowman, Conservation Compliance in the Crop Insurance Era, USDA/ERS (July 27, 2017), https://www.ers.usda.gov/amber-waves/2017/july/conservation-compliance-in-the-crop-insurance-era/ [https://perma.cc/56WG-7C2P] (describing how a variety of "farm support and conservation programs could work against each other").

regulators and farmers are necessary to facilitate operational changes at the level of the individual farmer.

Overall, the market-based incentives represented by a federal climate-smart certification program, on both the consumption and production sides, have potential to create a more climate-smart agricultural supply chain. In turn, the practices required for certification will improve soil health, sequester carbon, reduce greenhouse gas emissions, and mitigate vulnerability to the severe weather events associated with climate change. Climate-smart certification would ultimately support a quest for carbon neutrality in agriculture.

B. *Challenges Presented by Climate-Smart Certification*

1. *Financial Barriers.* — For U.S. farmers, climate-smart practices can produce significant cost-savings, reduce vulnerability to the severe impacts of climate change, and increase crop yields over time.[32] Still, many of these practices appear prohibitively expensive at first. The sustained benefits are often ignored or overshadowed in government policymaking, and current incentives are generally ineffective. To be sure, a transition to climate-smart farming does entail substantial upfront investment, specifically in soil health and ecosystem functions. For example, farmers must plant soil-building cover crops, rotate their crops, cultivate riparian forest buffers and windbreaks, and practice no-till farming, among other meaningful adjustments. Many of these practices increase a farm's labor needs and require more diverse sets of equipment that may be used only at certain times of the year or for certain crops.[33] By contrast, conventional systems of agriculture maximize yields while minimizing costs by relying on monoculture production (continuous growing of one crop on a single field).[34] The environment is forced to bear the true costs of monoculture production instead, by suffering pest infestations, contamination of soil and groundwater through increased fertilizer application, soil degradation and fertility loss, and decreases in biodiversity and pollinator activity.[35]

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32. House Climate Report, supra note 2, at 350.

33. Id. at 341.

34. Monoculture Farming in Agriculture Industry, Earth Observing Sys. (Oct. 20, 2020), https://eos.com/blog/monoculture-farming/ [https://perma.cc/P2AH-YCG3].

35. See Liz Carlisle, Maywa Montenegro de Wit, Marcia S. DeLonge, Alastair Iles, Adam Calo, Christy Getz, Joanna Ory, Katherine Munden-Dixon, Ryan Galt, Brett Melone, Reggie Knox & Daniel Press, Transitioning to Sustainable Agriculture Requires Growing and Sustaining an Ecologically Skilled Workforce, Frontiers in Sustainable Food Sys., 2009, at 1, https://www.frontiersin.org/articles/10.3389/fsufs.2019.00096/full [https://perma.cc/RRS5-PLQ8] (arguing for a transition to an agroecological farming system because the conventional system "leave[s] many communities vulnerable to climate-related disasters, as monocultures of input-dependent crops leave little room for adaptive resilience").

Government subsidies and policies undervalue and often deter sustainable farming practices.[36] In addition, "big agriculture" and crop insurance lobbyists powerfully resist change.[37] Based on decades of discouragement, climate-smart agriculture practices have been typecast as "environmental" practices, but not "good farming" practices, and crop insurance and conservation have been broadcast as incompatible.[38] Comprehensive change in federal agriculture policy is necessary to reverse these incentives and sufficiently finance adoption of climate-smart practices.

Further, federal certification would require effective assistance and support from partners, including conservation districts, climate hubs, extension services, nongovernmental organizations (NGOs), land-grant universities, and government agencies. Unfortunately, severe understaffing plagues the NRCS and the Farm Service Agency. A "decline in the number of NRCS local offices is impeding the delivery of technical assistance and on-the-ground support that farmers and ranchers need to implement climate stewardship practices."[39] But as more Americans grow concerned about the consequences of climate change, bipartisan support for investments in sustainable policies becomes more attainable.[40]

2. *Regulatory Challenges*. — Certification requires standard definitions of climate-smart practices to measure qualification and compliance. While certain agriculture methods are generally regarded as sustainable, what makes any individual farm climate-smart depends on the local challenges

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36. For example, agricultural lenders ignore the risk reduction value of soil health practices, House Climate Report, supra note 2, at 350, and crop insurance and commodities incentivize the monoculture production of corn, soy, wheat, and cotton, while investments in soil-building practices are dismissed as threats to short-term profits. Gustin et al., supra note 5.

37. See Political Power of the Agribusiness and Crop Insurance Lobbies, Taxpayers for Common Sense (Oct. 31, 2012), https://www.taxpayer.net/agriculture/political-power-of-the-agribusiness-and-crop-insurance-lobbies/ [https://perma.cc/443H-F5DH] (documenting the millions of dollars that the agribusiness and crop insurance industries spend on lobbying each year and how they have "gotten a good return on their investments in lobbying and political contributions, as Congress has been good to farmers over the years, at the expense of taxpayers").

38. In reality, conservation practices have a proven record of improving or stabilizing yields. Jessica McKenzie, If Crop Insurance Rewarded Conservation Practices, Would More Farmers Go No-Till?, Counter (July 30, 2019), https://thecounter.org/crop-insurance-conservation-no-till-regenerative-agriculture-climate-change-crisis-soil-health/ [https://perma.cc/JT7B-DET3].

39. House Climate Report, supra note 2, at 358.

40. Alec Tyson & Brian Kennedy, Two-Thirds of Americans Think Government Should Do More on Climate, Pew Rsch. Ctr. (June 23, 2020), https://www.pewresearch.org/science/2020/06/23/two-thirds-of-americans-think-government-should-do-more-on-climate/ [https://perma.cc/CLB7-H7CR] ("A majority of Americans continue to say they see the effects of climate change in their own communities and believe that the federal government falls short in its efforts to reduce the impacts of climate change.").

and environmental conditions of a particular farming community.[41] Coalescing those diverse needs into a single set of standards on a national scale requires intensive research, circumstance-specific considerations, flexible and evolving benchmarks, and localized technical assistance. In contrast, existing organic certification requires a simple analysis—whether the agricultural product been produced and handled without the use of synthetic chemicals and prohibited substances.[42] An effective certification program is necessarily complex, however, because climate-smart agriculture practices vary in their scope and type of environmental benefit, which range from carbon sequestration from no-till farming practices to water and energy savings from low-pressure irrigation systems.[43] Not all impacts of climate-smart practices can be directly quantified, and each farm faces different environmental risks.[44] A climate-smart certification must determine which agriculture practices to include, how to measure compliance, and how to enforce standards on individual farms. In short, it must decide how climate-smart a farm must be to achieve certification.[45]

II. CERTIFICATION MODELS

USDA organic certification and the Rainforest Alliance sustainable agriculture standards are two models that inform a federal climate-smart certification. This Part employs the history of organic agriculture in the United States to draw a comparison to climate-smart farming and then considers the application of Rainforest Alliance's compliance approach to a federal certification.

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41. What Is Climate-Smart Agriculture?, Rainforest All., https://www.rainforest-alliance.org/insights/what-is-climate-smart-agriculture/ [https://perma.cc/FP6V-E6KP] (last updated Jan. 21, 2021).

42. 7 U.S.C. § 6504 (2018).

43. Gene Johnston, 8 Ways to Be the Environment-Friendly Farm, FFA (Apr. 20, 2020), https://www.ffa.org/the-feed/8-ways-to-be-the-environment-friendly-farm/ [https://perma.cc/2QHY-936W].

44. See Laura van der Pol, To Make Agriculture More Climate-Friendly, Carbon Farming Needs Clear Rules, Colo. St. Univ. (June 30, 2021), https://source.colostate.edu/to-make-agriculture-more-climate-friendly-carbon-farming-needs-clear-rules/ [https://perma.cc/586P-VWNP] (noting the difficulties in determining carbon absorption in soil and its importance for functional carbon markets).

45. This in turn raises a broader question: Are certain foods ever climate friendly? For instance, if some of the most environmentally destructive foods, such as lamb, beef, corn, and palm oil, are produced in a more climate-friendly manner, but still vastly outweigh the climate impacts of other foods, such as peas, lentils, and tomatoes, should they be certified as climate-smart? Compare Kate Good, Taking a Bite Out of the Environment: Top 10 Most Environmentally Destructive Foods, One Green Planet, https://www.onegreenplanet.org/animalsandnature/most-environmentally-destructive-foods/ [https://perma.cc/P92Y-W69R] (last visited Feb. 7, 2022), with Kate Good, Dine With the Planet in Mind: Top 10 Eco-Friendly Foods, One Green Planet, https://www.onegreenplanet.org/animalsandnature/top-10-eco-friendly-foods/ [https://perma.cc/EN4A-BH6J] (last visited Feb. 7, 2022).

A. *USDA Organic Certification*

1. *History of Organic Certification.* — Organic certification efforts began at the private level. For example, California Certified Organic Farmers was founded in 1973 with the purpose of defining organic standards and certifying organic growers.[46] Six years later, the California Organic Food Act was signed into law, legally defining organic practices in the state, but providing no measures for support or enforcement.[47] During this time, other states developed their own standards regarding organic practices and certifications. "Organic" thus had no clear meaning from state-to-state. In response to these fragmented systems, the country needed national standards to assure uniform organic food labeling, particularly as interstate transportation and sale of organic products increased.[48] Accordingly, the 1990 Farm Bill enacted the Organic Foods Production Act.[49] The Act set a baseline for organic certification and enforcement, and it established the USDA National Organic Program to create federal standards for the production of organically grown agricultural products.[50]

2. *Strengths of Organic Certification.* — Organic certification has been largely successful in defining and enforcing the methods and substances allowable in organic production. A climate-smart certification should utilize these strengths. First, organic farming encourages climate-smart practices. Farmers build soil health by eliminating reliance on chemical inputs and synthetic fertilizers, which improves water quality and increases carbon storage and biodiversity.[51] Accordingly, the transition to climate-smart practices for an organic farm would be streamlined. Organic farms offer an existing network of farmers, many of whom may be particularly attuned to conservation efforts and interested in a climate-smart certification. A climate-smart certification could also utilize the organic certification public–private enforcement partnership. The National Organic Program accredits and oversees more than eighty certifiers, which verify and document the claims of organic farms and businesses by conducting inspections, investigating alleged violations, and enforcing suspension and

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46. Our History, Cal. Certified Organic Farmers, https://www.ccof.org/page/our-history [https://perma.cc/P7R5-438T] (last visited Feb. 7, 2022).

47. California's State Organic Program, Cal. Dep't of Food & Agric., https://www.cdfa.ca.gov/is/i_&_c/pdfs/CalOrganicPrgrmFact Sheet.pdf [https://perma.cc/Q867-ZL4U] (last visited Feb. 7, 2022).

48. Gordon G. Bones, State and Federal Organic Food Certification Laws: Coming of Age?, 68 N.D. L. Rev. 405, 408 (1992).

49. Id. at 408–09.

50. History of Organic Farming in the United States, Sustainable Agric. Rsch. & Educ. (2003), https://www.sare.org/publications/transitioning-to-organic-production/history-of-organic-farming-in-the-united-states/ [https://perma.cc/N4YE-PQXK].

51. What Is Organic Farming?, Sustainable Agric. Rsch. & Educ. (2003), https://www.sare.org/Learning-Center/Bulletins/Transitioning-to-Organic-Production/Text-Version/What-is-Organic-Farming [https://perma.cc/87S5-HUXZ].

revocations.[52] By taking advantage of this compliance framework, the positive relationship between farmers and their overseers could extend to climate certification. Climate-smart certification might also benefit from the integrity of the organic certification process. Rigorous enforcement and oversight "protect[s] consumers by protecting the integrity of the . . . seal" and "creates a level playing field and a fair marketplace for farmers, ranchers, and food handlers."[53]

Further, the organic market provides encouragement for a climate-smart commodity market. Certification created a price premium for organic products, typically twenty percent above their nonorganic counterparts, reflecting the additional costs of producing organic foods and consumers' willingness to pay more for organic products.[54] Farmers can achieve equal or greater profits from their organic products than from their nonorganic products.[55] In response, "certified organic acreage has more than quadrupled over the last 25 years, growing from 935,000 certified acres in 1992 to 4 million today."[56] Organic products have also grown in accessibility, and consumers can now purchase organic food at nearly three out of four conventional grocery stores.[57] Consumer preference for organically produced food stems from "concerns regarding health, the environment, and animal welfare," and similar preferences are likely to drive the demand for climate-smart products.[58]

3. *Drawbacks of Organic Certification.* — Organic certification can be costly. Some producers who practice organic farming choose not to certify their products as organic due to financial and administrative barriers in the process.[59] Certification requires regular visits from a USDA-accredited certification agent, extensive paperwork, bureaucratic oversight, and annual fees. Though producers may receive a federal organic certification cost-share reimbursement of fifty percent of their certification costs, it is

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52. Organic Enforcement, USDA Agric. Mktg. Serv., https://www.ams.usda.gov/services/enforcement/organic [https://perma.cc/3HB7-MEQR] (last visited Feb. 7, 2022).

53. Id.

54. Andrea Carlson, Investigating Retail Price Premiums for Organic Foods, USDA (Feb. 21, 2017), https://www.usda.gov/media/blog/2016/06/14/investigating-retail-price-premiums-organic-foods [https://perma.cc/EZV9-NGP7] (noting that retail price premiums relative to nonorganic counterparts fluctuate and depend on the product, but generally remain above twenty percent).

55. Organic Production, Sustainable Agric. Rsch. & Educ. (2017), https://www.sare.org/resources/organic-production/ [https://perma.cc/6GL4-URZY].

56. Id.

57. Organic food sales have increased each year and now represent almost five percent of the total U.S. food market. Id.

58. Organic Market Summary and Trends, USDA Econ. Rsch. Serv., https://www.ers.usda.gov/topics/natural-resources-environment/organic-agriculture/organic-market-summary-and-trends/ [https://perma.cc/A4BF-KQKQ] (last updated Feb. 12, 2021).

59. Michael D. Veldstra, Corinne E. Alexander & Maria I. Marshall, To Certify or Not to Certify? Separating the Organic Production and Certification Decisions, 49 Food Pol'y 429, 429 (2014).

capped at $500 per year.[60] Further, the transition process for organic certification takes three years. This means that a producer must obey all organic regulations and pay applicable fees during a thirty-six-month transition period while they are unable to use the organic label or charge its price premium.[61] Consequently, conversion to organic farming has not kept up with consumer demand, so organic products must be imported to the United States.[62] Organic agriculture thus does not meet its potential to improve U.S. agriculture's own environmental performance.

Further, organic certification is not comprehensively integrated into the suite of federal agriculture programs and incentives. Federal organic policy relies on market mechanisms to encourage organic conversion instead of government subsidization, as is typical in several European organic markets and throughout conventional U.S. farming policy.[63] Though support for organic farmers has increased over the years through programs such as the Organic Agricultural Research and Extension Initiative, the Environmental Quality Incentives Program, and the very limited certification cost-share program, government support is still inadequate to foster an optimal level of organic farming. An unsupportive institutional context and historical antagonism to organic farming in U.S. agriculture has hindered the kinds of research, marketing, and information structures and services, as well as financial and technical support, required to facilitate broader organic adoption.[64]

To be effective, a federal climate-smart certification requires institutional support and government backing, from research initiatives and marketing efforts to on-the-ground technical assistance and subsidies. Full incorporation into federal agriculture policy and the climate change agenda is necessary to engender a meaningful level of climate-smart farming transitions.

B. *Rainforest Alliance Certification*

The Rainforest Alliance is an international nonprofit organization that seeks to promote environmentally and socially sustainable practices in farming communities by training and certifying farmers to meet rigorous

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60. Organic Certification Cost Share Program (OCCSP), USDA Farm Serv. Agency, https://www.fsa.usda.gov/programs-and-services/occsp/index [https://perma.cc/3GUJ-7HQK] (last visited Feb. 7, 2022).

61. How to Transition Your Farm, Ranch or Business to Organic, USDA Agric. Mktg. Serv., https://www.ams.usda.gov/services/organic-certification/transitioning-to-organic [https://perma.cc/PN56-ZZ9J] (last visited Feb. 7, 2022).

62. Douglas H. Constance & Jin Young Choi, Overcoming the Barriers to Organic Adoption in the United States: A Look at Pragmatic Conventional Producers in Texas, 2 Sustainability 163, 164 (2010).

63. Id. at 167–68 (noting the positive message that official government support of organics sends to the public about the benefits of organics practices).

64. Id. at 182.

standards.[65] It provides a contextualized, performance-based model for sustainable agriculture certification that a federal climate-smart certification should utilize.[66]

Rainforest Alliance's sustainable agriculture standards provide a practical framework, adapted to the circumstances of each certificate holder, to "help farmers produce better crops, adapt to climate change, increase their productivity, set goals to achieve their sustainability performance and target investments to address their greatest risks."[67] Once farmers conduct risk assessments, Rainforest Alliance imposes three different sets of requirements: core requirements, mandatory improvements, and self-selected requirements, each with a pass/fail or metered evaluation.[68] Core requirements are those that farmers must always meet to achieve certification. For critical and fundamental sustainability risk topics, the requirements prescribe good practices and set a threshold to determine a producer's compliance. Additionally, certificate holders must conduct a baseline assessment of their farm, set targets for continuous improvement, and monitor their plans and progress toward those targets, creating a feedback loop for improvement.[69] Improvement requirements solidify those steps (at designated levels or years) that are designed to measure a producer's "journey to sustainability."[70] Finally, a certificate holder may select additional improvement requirements, based on their own risk assessments, aspirations, or sources of external support. To illustrate, in order to comply with the "Pruning and Renovation of Tree Crops" core requirement, farmers must implement "a pruning cycle for adequate formation, maintenance, and rejuvenation pruning according to crop needs, agro-ecological conditions, and applicable pruning guidelines."[71] An increasing percentage of group members on a farm must comply with the core requirement to satisfy the corresponding mandatory improvement indicator. Producers are also free to self-select an improvement requirement that

65. Our Approach, Rainforest All., https://www.rainforest-alliance.org/approach/ [https://perma.cc/N5G7-5HHB] (last visited Feb. 7, 2022).

66. Rainforest Alliance's certification has been successful in driving sustainable supply chains. Its standard spans seventy countries, applies to over twelve million acres of farmland, and impacts the livelihoods of over two million farming families. Crop Certification: Going Green Unlocks Global Markets for Farmers, U.N. Env't Programme (Nov. 26, 2020), https://www.unep.org/news-and-stories/story/crop-certification-going-green-unlocks-global-markets-farmers [https://perma.cc/CUT5-UM3W].

67. Rainforest All., Rainforest Alliance Sustainable Agriculture Standard: Farm Requirements 4 (2020), https://www.rainforest-alliance.org/wp-content/uploads/2020/06/2020-Sustainable-Agriculture-Standard_Farm-Requirements_Rainforest-Alliance.pdf [https://perma.cc/R8DW-RE9E].

68. Id. at 6.

69. Id. at 8.

70. Id. at 6.

71. Id. at 44.

they renovate the certified crop when "needed according to age, disease or other causes, to maintain productivity."[72]

A similar framework for climate-smart certification addresses the reality that climate-smart farming is not a standardized or universal endeavor. It must adapt to the risks and opportunities presented by the particular cropland, but it must also standardize the fundamental conservation practices necessary to fight agricultural climate change. Certified producers can utilize the standards, metrics, and implementation plans, developed alongside the certification bodies and providers of technical assistance, to maintain and improve their climate-smart status.

III. FEDERAL PROPOSAL

This Comment proposes that Congress include a federal Climate-Smart Certification Act in the 2023 Farm Bill. The Act should define minimum federal climate-smart production standards for all states, provide for a certification process and enforcement, and establish a Climate-Smart Standards Program to develop and implement regulations. The following Part outlines a proposal for federal legislation.

The purpose of the proposed Climate-Smart Certification Act is to: (1) establish national standards governing the production of climate-smart commodities; (2) assure consumers that climate-smart products meet a consistent standard; (3) facilitate a market in interstate commerce for food produced using climate-smart practices; (4) reduce greenhouse gas emissions and increase sequestration of carbon by incentivizing and subsidizing widespread adoption of climate-smart agricultural standards; (5) support the transition to climate-smart practices especially among producers of color and small scale producers; and (6) promote equitable access to markets for climate-smart commodities.[73]

A. *Substance of the Act*

1. *Certification Requirements.* — The Act should provide for a certification structure modeled on the Rainforest Alliance standard. To address the reality that climate-smart farming depends on the characteristics and risks of particular land, certification requirements should be divided into three types: core requirements, mandatory improvement requirements, and self-selected improvement requirements.

Accordingly, fundamental conservation practices and critical sustainability matters that are adoptable on all farms would be set as core requirements for certificate holders—always mandatory. Core requirements

72. Id.

73. See Env't Def. Fund, Comment Letter on Proposed Climate-Smart Agriculture and Forestry Partnership Program 1 (Nov. 1, 2021), https://www.edf.org/sites/default/files/documents/USDA-RFI-Climate-Smart-Agriculture-Forestry-Partnership-Program.pdf [https://perma.cc/V272-EH7Q].

should include practices such as reduced-till farming, cover cropping, crop rotations, riparian buffers, and synthetic fertilizer management.[74] A producer's compliance with each core requirement would be evaluated as a binary pass/fail or at a set threshold. Then, mandatory improvement requirements would set indicators for each core requirement at different levels and time periods, guiding producers in their progress toward sustainability. Producers would also self-select other improvement requirements based on the particular needs or opportunities presented by their land.

To illustrate, consider the reduced tillage core requirement. Reduced tillage limits plowing and other soil disturbances that release carbon into the environment.[75] This practice integrates plant residue into soils and can reduce nitrous oxide emissions and increase carbon sequestration. To comply with the core requirement, producers would be required to eliminate tillage on a specified percentage of their cropland. Mandatory improvement requirements would then set periodic goals for increasing the proportion of no-till land on a farm, with the ultimate goal of completely eliminating tillage.[76] Federal oversight, auditing, and inspections would ensure compliance with the requirements and progress toward improvement goals. Farmers could also self-select improvement requirements, such as adopting an organic no-till system, which eliminates reliance on chemical herbicides and further increases carbon sequestration.[77]

USDA should "convene a federal advisory committee to bring together companies, farmers, nonprofits, and other key stakeholders" to determine inclusion and prioritization of certain climate-smart farming practices and set indicator thresholds.[78] A National Climate-Smart Standards Board, in parallel to the National Organic Standards Board, should include diverse perspectives to evaluate climate-smart farming practices and coordinate agendas for further research. Based on public concerns and the results of scientific and practice-based studies, the Board would provide recommendations to the Secretary of Agriculture. USDA would use these insights to draft regulations regarding each core, mandatory improvement, and self-selected improvement requirement. Then, through the agency notice-and-comment rulemaking process, under which proposed rules are published in the Federal Register and open to comment

74. See Lehner & Rosenberg, supra note 1, at 64 tbl.1 (listing the average annual net emissions reductions of these and other agriculture practices).

75. Id. at 77.

76. Id. at 79 (noting the importance of continuous no-tillage to maintain carbon sequestration).

77. Id. at 80 (noting preliminary studies indicating that organic no-till systems offer "significantly higher levels of carbon sequestration" than conventional no-till farming but citing the need for further research).

78. House Climate Report, supra note 2, at 351.

from the public, affected parties could offer input or raise concerns for the USDA to consider and respond to.[79]

Current USDA initiatives may facilitate the research necessary for effective climate-smart standards. In September 2021, USDA announced a Climate-Smart Agriculture and Forestry Partnership. This new initiative will finance the deployment of climate-smart farming practices to promote a market for climate-smart agricultural commodities.[80] USDA will support a "set of pilot projects that provide incentives to implement climate smart conservation practices on working lands and to quantify and monitor the carbon and greenhouse gas benefits associated with those practices."[81] Public comments and feedback are currently informing the design of the initiative, and USDA will solicit climate-smart project proposals in early 2022.[82] The results of these projects and the data collected could provide a Climate-Smart Standards Board with a foundation for the certification standards.

2. *Oversight and Enforcement.* — The Act should provide for robust oversight and enforcement mechanisms to advance the integrity of a climate-smart certification. Oversight should be combined with technical assistance for transitioning farmers. Farmers may be more willing to trust their supervisor if they offer localized support, advice for adoption of new practices, and cost-sharing grants. For instance, Climate Hubs or a similar government body could provide specialized expertise and practical tools, materials, and methods for compliance with the varying certification requirements.[83] The Act should also encourage USDA-accredited organic certifying agencies to serve as certifiers for the climate-smart certification program.[84] By building on an existing network of relationships between organic producers and their overseers, more organic operations may participate in climate-smart certification.

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79. Rulemaking, USDA Agric. Mktg. Serv., https://www.ams.usda.gov/rules-regulations/rulemaking [https://perma.cc/X58G-XB2K] (last visited Feb. 7, 2022).

80. Press Release, USDA, USDA Announces $3 Billion Investment in Agriculture, Animal Health, and Nutrition; Unveils New Climate Partnership Initiative, Requests Public Input (Sept. 29, 2021), https://www.usda.gov/media/press-releases/2021/09/29/usda-announces-3-billion-investment-agriculture-animal-health-and [https://perma.cc/XU6P-H7WJ].

81. Id.

82. Id.

83. Lehner & Rosenberg, supra note 1, at 131 (noting the need for increased funding for Climate Hubs and other extension services to provide support for climate mitigation and adaptation efforts); see also House Climate Report, supra note 2, at 361 ("USDA's Climate Hubs are a collaboration of the Department's research and program agencies to develop and deliver region-specific tools and information to agricultural producers that enable climate-informed decision-making and provide assistance to implement those decisions.").

84. House Climate Report, supra note 2, at 351.

Strong enforcement measures are also necessary. If a producer fails to meet core requirements and improvement targets, a ladder of consequences should follow.[85] First, the oversight body should assist the producer's efforts to correct the issue, and the producer should create a corrective action plan to address the failure's root cause and prevent recurrence. The overseer may approve a producer's action plan or recommend additional steps to remedy any deficiencies. The producer would then be subject to follow-up audits and increased monitoring. If the inspections reveal systemic failure, fraud, inaction, cover-up, or other indications that the action plan has not been implemented satisfactorily within a prescribed time frame, the agency may choose to suspend or cancel the certification. Upon cancellation (and during a suspension period), the certificate holder must immediately cease its sales of products with Climate-Smart Certified claims and remove all uses of the certification mark and label. If the producer continues to sell or market its products as "climate-smart," USDA should impose fines and penalties in parallel to its organic labelling enforcement. Further, when a producer loses its climate-smart certification, it would also lose its eligibility for the associated government programs and benefits.

Effective enforcement must balance the concerns of deterring certification through onerous procedures and costly penalties with the need to ensure the trustworthiness of the climate-smart seal. Strong relationships with oversight bodies and support for implementing targeted corrective actions plans may help farmers to find that the value of certification outweighs the costs of increased oversight. To promote these relationships, climate-smart certification must have the resources to support each producer's needs.

3. *Integration Into Federal Policy.* — The Farm Bill must comprehensively integrate the climate-smart certification into federal agriculture policy. To adequately incentivize widespread adoption of climate-smart farming practices, certified producers must receive government benefits. Producers should receive various subsidies and grants, including preferred loan rates on purchases for land, infrastructure, and equipment, crop insurance discounts, and preference for federal procurement contracts.[86]

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85. The Rainforest Alliance standard provides a model for this enforcement framework. See Rainforest All., 2020 Certification and Auditing Rules § 1.7, at 57–63 (June 30, 2020), https://www.rainforest-alliance.org/wp-content/uploads/2020/06/2020-Rainforest-Alliance-Certification-and-Auditing-Rules.pdf [https://perma.cc/CWZ7-46ZY] (last updated Feb. 4, 2021).

86. House Climate Report, supra note 2, at 340–53. Federal procurement is a hugely powerful tool to influence markets and create demand. See Div. for Heart Disease & Stroke Prevention, CDC, Improving the Food Environment Through Nutrition Standards: A Guide for Government Procurement 2–5 (2011), https://cspinet.org/sites/default/files/attachment/dhdspprocurementguide.pdf [https://perma.cc/5Q98-K7Z6] (noting the impact of procurement policies on a variety of settings such as work sites, distributive meal programs, day care centers, schools, prisons, camps, and concession stands).

Thus, a successful climate-smart certification requires a reorganization of much of federal agriculture policy.

IV. EVALUATION OF RECOMMENDATION

Federal climate-smart certification presents a promising opportunity to combat the climate change impacts of U.S. agriculture. Still, proponents must overcome significant barriers to advance it. This Part considers the feasibility of the proposed federal legislation, in terms of political appetite for and practical constraints against environmental regulation of agriculture. It then considers the potential effectiveness of the proposal to measurably reduce greenhouse gas emissions and increase carbon sequestration. It concludes by evaluating potential alternatives to federal climate-smart certification.

A. *Feasibility*

Under the Trump Administration, USDA forbade the use of the term "climate change."[87] The Farm Bureau, the most powerful agriculture industry lobbying group, does not concede "the extent of human influence over the climate," promoting a mindset that has taken root among many farmers.[88] The leap to a federal certification program designed to minimize agriculture's impact on climate change is a tall political order.

There are signs of political interest, however. From buzz surrounding agricultural carbon markets,[89] to the new USDA Climate-Smart Agriculture Initiative[90] and the House Select Committee's recommendation for "climate-based producer" certification,[91] environmental agriculture reform appears to be on the table. Further, the Biden Administration's "whole-of-government approach" to combating the climate crisis prioritizes decarbonization in the agriculture sector in parallel to the energy

87. Bill McKibben, Opinion, The Trump Administration's Solution to Climate Change: Ban the Term, Guardian (Aug. 8, 2017), https://www.theguardian.com/commentisfree/2017/aug/08/trump-administration-climate-change-ban-usda [https://perma.cc/JE97-2N8V].

88. Compare the Farm Bureau's take on climate change ("AFBF policy does not render a scientific judgment on the details of climate change. Farmers, in fact, grapple with the weather every day—it is part of having Mother Nature as a business partner."), with the National Climate Assessment conducted by thirteen federal agencies ("Climate disruptions to agricultural production have increased in the past 40 years and are projected to increase over the next 25 years. By mid-century and beyond, these impacts will be increasingly negative on most crops and livestock."). Gustin et al., supra note 5.

89. Tom Philpott, The Climate Bill Even Big Agriculture Loves, Grist (June 8, 2021), https://grist.org/agriculture/growing-climate-solutioins-act-conservative-support/ [https://perma.cc/37SW-LQJD].

90. See supra notes 80–82.

91. House Climate Report, supra note 2, at 351.

sector[92]—industries which vastly overshadowed agriculture in prior climate strategies.[93] USDA is aiming to improve measurement of carbon sequestration and greenhouse gas emissions, create new markets for producers using climate-smart practices, and focus on resilient food production.[94] Progress in these efforts would facilitate a successful climate-smart certification.

Beyond political challenges, practical constraints threaten the viability of a federal climate-smart certification. First, USDA must coordinate across and within agencies, engage in public–private partnerships, and work with academic and research institutions to develop a cohesive agricultural climate plan.[95] Bureaucratic constraints, lack of funding, and severe understaffing may impede these efforts. Further, both consumers and producers must adjust their behavior for a climate-smart certification to create its intended effects. On the consumer side, high prices are typically considered one of the main barriers to the purchase and use of sustainable products.[96] Accordingly, a price premium for climate-smart products, necessary to incentivize producers, must balance affordability for consumers and equitable availability.[97] Further, farmers who have been engaging in conventional agriculture must be willing to adopt new farming practices. Some farmers may distrust government intrusion or retain skepticism of anthropogenic climate change. New practices present uncertainty, potentially difficult transition periods, and threats to short-term profits. In an

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92. See The United States of America, Nationally Determined Contribution, Reducing Greenhouse Gases in the United States: A 2030 Emissions Target 2, 5, https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/United%20States%20of%20America%20First/United%20States%20NDC%20April%2021%202021%20Final.pdf [https://perma.cc/WPM8-VRKY] [hereinafter The United States of America, Nationally Determined Contribution] (last visited Feb. 11, 2022) ("America's vast lands provide opportunities to both reduce emissions, and sequester more carbon dioxide. The United States will support scaling of climate smart agricultural practices (including, for example, cover crops), reforestation, rotational grazing, and nutrient management practices.").

93. Compare United States of America First NDC (Archived) (Mar. 9, 2016), https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/United%20States%20of%20America%20First/U.S.A.%20First%20NDC%20Submission.pdf [https://perma.cc/R9EE-XK8G] (not mentioning agriculture), with The United States of America, Nationally Determined Contribution, supra note 92, at 3–5 (identifying the agriculture sector as a separate emissions reduction "pathway").

94. See Press Release, USDA, supra note 80.

95. USDA, USDA Building Blocks for Climate Smart Agriculture and Forestry: Implementation Plan and Progress Report 13 (2016), https://www.usda.gov/sites/default/files/documents/building-blocks-implementation-plan-progress-report.pdf [https://perma.cc/JB6B-L9QG].

96. Grunert et al., supra note 22.

97. For instance, SNAP funding could be matched when spent on climate-smart products. See How It Works, Double Up Food Bucks, https://doubleupnys.com/how-it-works/ [https://perma.cc/N8VF-DR9E] (last visited Feb. 8, 2022) (explaining New York's Double Food Bucks Program that matches SNAP dollars spent on fruits and vegetables grown in New York).

industry with thin margins, government support is necessary to make adoption of climate-smart practices attainable. A federal climate-smart certification should promote local knowledge sharing and facilitate farmer-to-farmer education efforts to reduce some of this uncertainty.[98]

B. *Potential Effectiveness*

To determine the effectiveness of a federal climate-smart certification in combatting climate change, measurement criteria are necessary. Quantifying agricultural emissions is a complex endeavor. In contrast to other sectors, such as coal, oil, or gas, where the government can "identify emissions trends with minimal uncertainty, closely monitor emissions sources, and even compensate for emission reductions with precision," agricultural emissions are diffuse.[99] The uncertainty in attempted measurements and model calculations makes it difficult to determine the impact of specific policies on greenhouse gas reduction and carbon sequestration.

Climate-smart certification compliance could be practice-based or performance-based. Practice-based criteria identify practices known, based on available science, to have certain positive climate-related impacts (even if the individual benefits to particular plots of land cannot be quantified). A producer's compliance would then be evaluated as a binary pass/fail. On the other hand, performance-based criteria measure the amount of carbon sequestered or greenhouse gases reduced for each plot of land. Then, compensation or incentives are set based on the actual outcomes of each conservation practice. Although GHG accounting tools, such as COMET-Farm, allow estimates of "greenhouse gas emissions and sinks on farms using data submitted by farmers about their land and management as well as spatially specific information from geospatial databases on climate and soil conditions,"[100] these estimates do not reach the level of certainty necessary to craft effective standards. The complexity in measuring climate benefits of specific policies on diverse sets of cropland with implementation that differs by context is prohibitive in the scale necessary for climate-smart certification. Instead, this Comment adopts the Rainforest Alliance approach and recommends practice-based standards, separated into three tiers of requirements, based on the generalized climate benefits of each. Though potentially less precise, this approach is the most practical given the current state of research. Federal climate-smart standards should remain attuned to developments in measurement techniques and research on effects of certain conservation policies, and the standards should be adjusted accordingly.

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98. House Climate Report, supra note 2, at 361 ("Demonstrating tangible examples of successful climate-smart agricultural practices such as diverse crop rotations, no-till farming, and prescribed grazing can be critical for other farmers to implement similar practices.").

99. Lehner & Rosenberg, supra note 1, at 56.

100. House Climate Report, supra note 2, at 347.

C. *Alternatives*

Private sector certification efforts and state level programs provide alternatives, or supplements, to federal climate-smart certification. Federal legislation may be most appropriate once products bearing similar ecolabels, subject to different certification standards and state regulations, are common in interstate commerce. As is evident from organic certification efforts, only then were national standards to assure "consistent and uniform organic food labeling throughout the United States" considered necessary.[101]

Though no state has created a climate-smart certification to date, many states have piloted innovative methods to incentivize farmers to reduce the climate change impacts of agriculture. For instance, California's Healthy Soils Program has been successful in helping farmers increase carbon sequestration, improve soil health, and reduce greenhouse gas emissions.[102] It provides financial assistance for implementation of conservation management practices such as cover cropping, no-till, reduced-till, mulching, compost application, and conservation plantings. Since 2017, the program has provided over $42 million to 640 projects on farms and ranches, and farmer demand for funding from the program has increased six-fold.[103] Additionally, Iowa's cover crop initiative has provided farmers with crop insurance discounts for planting cover crops, improving the health of their soil, and preventing erosion.[104] If federal certification legislation is unsuccessful, the government should foster and support these state initiatives to encourage climate-smart farming practices. Additionally, if climate-smart certification is successful, states should be free to adopt more restrictive standards than those that are federally required and to continue experimenting with different incentive and support models.

On the private side, there are a plethora of carbon certifications, ecofriendly labels, and green marketing efforts. Reliable private certifications, such as Rainforest Alliance[105] and the Non-GMO project,[106] have helped consumers identify environmentally friendly products and are backed by

101. Bones, supra note 48, at 408.

102. Healthy Soils Program, Cal. Dep't of Food & Agric., https://www.cdfa.ca.gov/oefi/healthysoils/ [https://perma.cc/XZ5W-ZLTQ] (last visited Feb. 8, 2022).

103. The California Healthy Soils Program: A Progress Report, Cal. Climate & Agric. Network 1 (2020), https://calclimateag.org/wp-content/uploads/2020/11/CA-HSP-Progress-Report-CalCAN_FinalWeb.pdf [https://perma.cc/FW63-W4B2].

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rigorous third-party verification and compliance assurance. Conversely, confusing and misleading environmental claims abound in other labels that are not subject to transparent standards and oversight. Federal climate-smart certification would be the most effective way to regulate these claims.

CONCLUSION

U.S. agriculture's contributions to climate change mandate a comprehensive response. A federal climate-smart certification would be a powerful tool, alongside other conservation-focused reforms, to catalyze widespread changes in farmer and consumer behavior. This Comment calls upon Congress to promote agriculture's ability to combat climate change, rather than continue to subsidize practices that intensify its consequences. By establishing standards for climate-smart farming and providing for oversight, support, and enforcement, a federal program would facilitate a climate-smart agricultural supply chain and encourage stewardship of our natural resources. Though faced with regulatory challenges, political resistance, and entrenched farming practices, Congress should strive to create a climate-smart certification program to assist farmers in their adoption of climate-smart practices and empower consumers and businesses to select the verified environmentally friendly choice.