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A FARM BILL TO HELP FARMERS WEATHER CLIMATE CHANGE  
*Peter H. Lehner and Nathan Rosenberg*

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## A Farm Bill to Help Farmers Weather Climate Change

Peter H. Lehner\* and Nathan A. Rosenberg\*\*

Climate change affects farmers and ranchers more than almost any other sector. Agriculture depends on consistent weather patterns, and the more frequent droughts, floods, heat waves, pest attacks, and other impacts of climate change make an often uncertain activity even more so. A farm bill that focuses on the true long-term interests of farmers would help producers slow climate change, while also helping them better prepare for the inevitable coming weather changes. Fortunately, many practices that help producers reduce their contribution to climate change also enhance their farms' resilience to higher temperatures and more extreme weather. The farm bill should prioritize adoption of these climate-friendly practices. It's time to decarbonize the farm bill.

While this is a radical—or at least politically charged—idea in the United States, other countries are beginning to treat agriculture as a major source of emissions<sup>1</sup>—and as a major pathway for reducing net emissions. Alongside the negotiations over the Paris Agreement on climate change in 2016, hundreds of countries, regional groups, and others joined in an initiative called “4/1000” to increase soil carbon stocks by 0.4 percent

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<sup>1</sup> See, e.g., Eva Wollenberg et al., *Reducing Emissions from Agriculture to Meet the 2°C Target*, 22 GLOBAL CHANGE BIOLOGY 3859, 3860 (2016). Under the 2015 Paris Agreement of the United Nations Framework Convention on Climate Change, each country sets their own emission targets, while also planning and reporting their contribution. *Id.* So far at least 119 countries have pledged to reduce their agricultural greenhouse gas emissions in their statements of Intended Nationally Determined Contributions (“INDC”s). *Id.*

every year.<sup>2</sup> This could be enough to offset about 30 percent of global anthropogenic emissions.<sup>3</sup>

The measures necessary to increase soil carbon stocks would also reduce nonpoint source water pollution and soil erosion, while increasing agricultural productivity, soil water carrying capacity, and drought resilience.<sup>4</sup> With the reauthorization of the farm bill every five years, and perhaps as soon as 2018, the U.S. has an opportunity to incentivize practices that benefit producers as well as society more broadly. This essay offers suggestions on how the farm bill can be reformed to accomplish this. Although it's unlikely the 2018 farm bill will address climate change, it's not too early to lay the foundation for 2023 and beyond.

### **Moving beyond the 1938 Farm Bill**

The structure and priorities of the farm bill still owe much to the Agricultural Adjustment Act of 1938.<sup>5</sup> The 1938 Farm Bill compensated farmers for "soil conservation," but, as observers at the time noted, the conservation component was largely a legal fiction, intended to ensure that the legislation, which primarily benefited large-scale commodity producers,<sup>6</sup> passed constitutional

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<sup>2</sup> Budiman Minasny, *Soil Carbon per 4 Mille*, 292 *GEODERMA* 59, 82 (2017).

<sup>3</sup> *Id.*; Contra A.J. VandenBygaart, Letter to the Editor, *Comments on Soil Carbon 4 per Mille*, 309 *GEODERMA* 113, 113-14 (2018) (arguing that Minasny et al. overstate soil carbon sequestration's ability to mitigate climate change).

<sup>4</sup> Rattan Lal, *Sequestering Carbon in Soils of Agro-Ecosystems*, 36 *FOOD POL'Y* S33, S36 (2011); Rattan Lal, *Sequestering Carbon and Increasing Productivity by Conservation Agriculture*, 70 *J. SOIL & WATER CONSERVATION* 55A, 55A, 58A-59A (2015).

<sup>5</sup> Wayne D. Rasmussen, *New Deal Agricultural Policies after Fifty Years*, 68 *MINN. L. REV.* 353, 358-359 (1984); DOUGLAS R. HURT, *PROBLEMS OF PLENTY: THE AMERICAN FARMER IN THE TWENTIETH CENTURY* 151 (2002); Devan A. McGranahan et al., *A Historical Primer on the US Farm Bill: Supply Management and Conservation Policy*, 68 *J. SOIL & WATER CONSERVATION* 67A, 69A (2013).

<sup>6</sup> See, e.g., PETE DANIEL, *LOST REVOLUTIONS: THE SOUTH IN THE 1950s* 41-42 (Univ. of North Carolina Chapel Hill Press 2000); CHARLES KENNETH ROBERTS, *THE FARM SECURITY ADMINISTRATION AND RURAL REHABILITATION IN THE SOUTH* ix, 29 (Univ. of Tennessee Press 2015); GILBERT C. FITE, *COTTON FIELDS NO MORE: SOUTHERN AGRICULTURE 1865-1980* 143 (Univ. of Kansas Press 1984) (discussing the Soil Conservation and Domestic Allotment Act, which provided the model for the Agricultural Adjustment Act of 1938). The 1938 law also strengthened the influence of the conservative American Farm Bureau Federation. David Brody, *On the Failure of U.S. Radical Politics: A Farmer-Labor Analysis*, 22 *INDUS. REL.* 156 (1983).

muster.<sup>7</sup> Subsequent farm bills have followed this pattern, using conservation as a means to support large-scale, capital-intensive agriculture, but rarely treating it as end in itself. This has resulted in a farm safety net that places the interests of agribusiness over farmers and conservation programs that often do not do enough to strengthen the environment or rural communities.

This history must help guide the decarbonization of the farm bill. Some agricultural practices may, in the short-term, help reduce greenhouse gas emissions, but in the long-run shore up an industrial model of agriculture that is ultimately less climate-friendly.<sup>8</sup> Moreover, a successful, climate-friendly farm bill would not only include programs designed to reduce emissions and increase soil health, but it would also work to change the political dynamics of farm communities. Without building a robust base of support in rural America by targeting benefits at a wide range of people—rather than a small group of very large, often corporate farms—any climate-friendly programs will soon face co-option or dissolution.

Both the farm safety net and conservation programs must be designed with these long-term goals in mind. Some proposals to make conservation and research programs more “flexible” and financially secure by increasing the private sector’s involvement,<sup>9</sup>

<sup>7</sup> GRANT MCCONNELL, *THE DECLINE OF AGRARIAN DEMOCRACY* 129 (3d ed. 1977); Paul W. Ward, *The AAA Puts on False Whiskers*, *THE NATION*, Jan. 22, 1936, at 93 (describing the rush to pass legislation basing farm benefits on the pretext of ‘soil conservation’ rather than ‘crop control’ in order to escape judicial veto). See *United States v. Butler*, 297 U.S. 1, 68 (1936) (finding the Agricultural Adjustment Act of 1933 unconstitutional because regulated and controlled agricultural production, invading the reserved rights of the states).

<sup>8</sup> See, e.g., *Open Letter from Civil Society on the Global Alliance for Climate-Smart Agriculture*, CLIMATE SMART AGRICULTURE CONCERNS (July 2014), <http://www.climatesmartagconcerns.info/english.html>; Ben Lilliston, *The Clever Ambiguity of Climate Smart Agriculture*, INST. FOR AGRIC. AND TRADE POLICY (Dec. 4, 2015), <https://www.iatp.org/blog/201512/the-clever-ambiguity-of-climate-smart-agriculture>.

<sup>9</sup> See, e.g., Regional Conservation Partnership Program Improvement Act of 2017, S. 1966, 115<sup>th</sup> Cong. (2017) (granting private entities more control over how conservation funds are spent); Callie Eideberg, *How Congress Can Help Farmers Stay Profitable and Resilient*, ENVTL. DEF. FUND (Feb. 27, 2017), <http://blogs.edf.org/growingreturns/2017/02/27/how-congress-can-help-farmers-stay-profitable-and-resilient/> (proposing to strengthen farm bill conservation programs through private sector investment and collaboration).

for example, while advertised as a win-win for farmers and the environment,<sup>10</sup> would in fact harm both.<sup>11</sup> Many of the largest sources of private funding have very different interests than environmental stewardship or rural communities. Thus, ranking research funding applications higher if the applicants secure corporate matches would in the long-run advance the interests of agribusiness over those of independent farmers and the environment.

Fortunately, it may be politically advantageous to decarbonize the farm bill with a long-term focus, prioritizing the public interest with the input of rural communities and a diverse range of farmers. Agribusiness is increasingly concentrated: Just four companies sold over 85 percent of the beef in the U.S.;<sup>12</sup> five companies slaughter almost 70 percent of the swine;<sup>13</sup> with recent mergers, just three companies control over 60 percent of agrochemical and seed sales internationally.<sup>14</sup> This concentration, as well as the concentration of payments under federal farm programs,<sup>15</sup> creates tensions in farm country,<sup>16</sup> and thus a political opening.

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<sup>10</sup> See, e.g., Callie Eideberg, *The Next Farm Bill Can Jump Start Conservation. Here's How*, ENVTL. DEF. FUND (Oct. 24, 2017), <http://blogs.edf.org/growingreturns/2017/10/24/farm-bill-rcpp-conservation-innovation/> (describing the Regional Conservation Partnership Program Improvement Act of 2017 as “a win-win for farmers and the environment.”).

<sup>11</sup> See generally Joshua Ulan Galperin, *Trust Me I'm a Pragmatist: A Partially Pragmatic Critique of Pragmatic Activism*, 42 COLUM. J. ENVTL. L. 426 (2017) (discussing the pitfalls of relying on ‘win-win solutions’ as a means of environmental protection).

<sup>12</sup> Kristina Johnson & Samuel Fromartz, *NAFTA's 'Broken Promises': These Farmers Say They Got the Raw End of the Trade Deal*, NPR (Aug. 7, 2017), <https://www.npr.org/sections/thesalt/2017/08/07/541671747/nafta-s-broken-promises-these-farmers-say-they-got-the-raw-end-of-trade-deal>.

<sup>13</sup> THE AGRIBUSINESS ACCOUNTABILITY INITIATIVE, HOGGING THE MARKET: HOW POWERFUL MEAT PACKERS ARE CHANGING OUR FOOD SYSTEM AND WHAT WE CAN DO ABOUT IT 2, [http://www.ase.tufts.edu/gdae/Pubs/rp/AAI\\_Issue\\_Brief\\_4.pdf](http://www.ase.tufts.edu/gdae/Pubs/rp/AAI_Issue_Brief_4.pdf).

<sup>14</sup> *Merge-Santo: New Threat to Food Sovereignty*, ETC GRP. (Mar. 23, 2016), <http://www.etcgroup.org/content/merge-santo-new-threat-food-sovereignty>.

<sup>15</sup> The largest 7 percent of producers owns 60 percent of the harvested cropland, receives almost half of all government farm payments, and takes in almost 90 percent of all net farm income. See U.S. DEP'T OF AGRIC., 2012 CENSUS OF AGRICULTURE 94, 98, 100 tbl. 65 (2014), [https://www.agcensus.usda.gov/Publications/2012/Full\\_Report/Volume\\_1\\_Chapter\\_1\\_US/usv1.pdf](https://www.agcensus.usda.gov/Publications/2012/Full_Report/Volume_1_Chapter_1_US/usv1.pdf) (Calculated by the authors using data from the Census of Agriculture).

<sup>16</sup> See, e.g., CTR. FOR RURAL AFFAIRS, MAY/JUNE 2013 STUDY AMONG RURAL/SMALL-

Advancing carbon-sequestering policies could prove popular in many rural areas if those policies were designed to benefit a broader range of farmers than current programs, improve water quality and local landscapes, and help reverse land consolidation.

### Reforming farm bill programs

The farm bill is a massive omnibus bill. Its most recent iteration, the Agricultural Act of 2014, ran to 357 pages, amended 16 previous farm bills, and authorized almost a trillion dollars of spending.<sup>17</sup> Because the bill is typically so large, we do not attempt to provide a comprehensive guide to decarbonizing it.<sup>18</sup> Instead we focus on six critical steps that Congress should take to make future farm bills better for rural communities and the climate.

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TOWN AMERICANS 12 (2013) <http://files.cfra.org/pdf/Poll-of-Rural-Voters-Toplines-by-Income.pdf>. A 2013 survey of 804 registered voters in rural America found that 68 percent agreed or strongly agreed with the statement that “[t]oo much of federal farm subsidies go to the largest farms, hurting smaller family farms.” See *id.* Nationally, agribusiness companies are among the least popular corporations; Harris Poll’s annual poll of the 100 most visible corporations in the United States, for example, ranked Monsanto as having the fourth worst reputation. *Harris Poll: Corporate Reputation Politically Polarized as Companies Wrestle with Taking a Stand for Their Values*, CISION PR NEWS WIRE (Feb. 9, 2017), <https://www.prnewswire.com/news-releases/harris-poll-corporate-reputation-politically-polarized-as-companies-wrestle-with-taking-a-stand-for-their-values-300404867.html>. A 2017 survey of 1,506 registered voters nationwide also found that 90 percent of voters had either “very serious concerns” or “somewhat serious concerns” about the potential merger of Monsanto and Bayer. Memorandum from Public Policy Polling to Interested Parties, 90 Percent of Voters Nationwide Concerned about Potential Merger of Monsanto and Bayer; Overwhelming Majority Say Merger Will Result in Harm to Consumers, Farmers (June 14, 2017), [https://1bps6437gg8cl69i0yldrtgz-wpengine.netdna-ssl.com/wp-content/uploads/2017/legacy/National\\_Monsanto\\_Memo\\_6.9.17\\_002.pdf](https://1bps6437gg8cl69i0yldrtgz-wpengine.netdna-ssl.com/wp-content/uploads/2017/legacy/National_Monsanto_Memo_6.9.17_002.pdf).

<sup>17</sup> Letter from Douglas W. Elmendorf, Director, Congressional Budget Office, to Frank D. Lucas, Chairman, U.S. House of Representatives Committee on Agriculture (Jan. 28, 2014), <https://www.cbo.gov/sites/default/files/113th-congress-2013-2014/costestimate/hr2642lucaslr00.pdf>.

<sup>18</sup> See generally Peter Lehner & Nathan Rosenberg, *Legal Pathways to Carbon-Neutral Agriculture*, 47 ENVTL. L. REP. 10845 (2017) (comprehensive approach to decarbonizing farm programs). The Farm Bill Law Enterprise (“FBLE”) and the National Sustainable Agriculture Coalition (“NSAC”) are also independently releasing comprehensive sets of recommendations designed to make the farm bill more sustainable and equitable. See generally BROAD LEIB ET AL., FARM BILL LAW ENTERPRISE, DIVERSIFIED AGRICULTURAL ECONOMIES (2018), [http://www.farmbillaw.org/wp-content/uploads/2018/03/FBLE\\_Diversified-Agricultural-Economies\\_Final.pdf](http://www.farmbillaw.org/wp-content/uploads/2018/03/FBLE_Diversified-Agricultural-Economies_Final.pdf); NAT’L SUSTAINABLE AGRIC. COALITION, AN AGENDA FOR THE 2018 FARM BILL (2017), <http://sustainableagriculture.net/wp-content/uploads/2017/10/NSAC-2018-Farm-Bill-Platform-FINAL.pdf>.



*1. Expand research and extension service on climate-friendly practices.*

Over the last decade, public spending on agricultural research has dropped by almost one-third<sup>19</sup> and less than two percent of the remaining funding is devoted to diversified systems,<sup>20</sup> which offer the greatest climate and environmental benefits.<sup>21</sup> Given the critical need both for greater study and demonstration of many climate-friendly practices, Congress should restore sufficient funding to U.S. Department of Agriculture (“USDA”) research programs and require that at least half of the department’s research expenditures support climate-friendly practices or systems.

Similarly, extension services have proven remarkably effective at disseminating and perpetuating new agricultural practices.<sup>22</sup> Yet funding is way down and there is inadequate focus on climate-friendly practices such as the use of cover crops, prairie grass strips, perennial crops, and buffer zones along streams and lakes. Congress should both restore funding for extension to at least \$900 million annually, and, perhaps building on the existing (for now) Climate Hubs, devote the additional funding to support practices that will both increase soil carbon stocks and improve farm resilience to extreme weather.<sup>23</sup>

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<sup>19</sup> Matthew Clancy et al., *U.S. Agricultural R&D in an Era of Falling Public Funding*, U.S. DEP’T OF AGRIC, ECON. RES. SERV. (Nov. 10, 2016), <https://www.ers.usda.gov/amber-waves/2016/november/us-agricultural-rd-in-an-era-of-falling-public-funding/>.

<sup>20</sup> Marcia DeLonge et al., *Investing in the Transition to Sustainable Agriculture*, 55 ENVTL. SCI. & POL’Y 266, 267 (2016).

<sup>21</sup> *See id.*

<sup>22</sup> *See, e.g.*, Irwin Feller, *Technology Transfer, Public Policy, and the Cooperative Extension Service—OMB Imbroglia*, 6 J. POL’Y ANALYSIS & MGMT. 307, 307 (1987) (“The Cooperative Extension Service has come to represent the best of both an articulated but decentralized political arrangement and of a technology transfer system.”); George McDowell, *Engaged Universities: Lessons from the Land Grant Universities and Extension*, 585 ANNALS AM. ACAD. POL. & SOC. SCI. 31, 35-36 (2003).

<sup>23</sup> Congress should also provide permanent baseline funding for the USDA National Agroforestry Center, while increasing its budget to at least \$10 million. It was originally appropriated \$5 million by Congress in the 1990 Farm Bill; however it typically receives about \$1 million, despite agroforestry’s demonstrated potential to rapidly increase carbon sequestration. *See* Food, Agriculture, Conservation, and Trade Act of 1990, Pub. L. No. 101-624, §1243, 104 Stat. 3546 (1990).

*2. Enforce conservation limitations—and place new ones on payment size*

In order to remain eligible for a number of important federal farm programs, farmers are prohibited from producing agricultural products on highly erodible land without a conservation plan,<sup>24</sup> or from doing so on unconverted wetlands under any circumstances.<sup>25</sup> These requirements, known as “conservation compliance,” apply to the crop insurance program, each of the conservation programs, and many smaller programs. They offer potentially important climate benefits because conventional farming on highly erodible land and wetlands results in significant greenhouse gas emissions.<sup>26</sup>

These requirements must be strengthened, however, to ensure that government funds protect—rather than undermine—soil and water quality and that farmers implementing sound stewardship practices are not placed at a disadvantage. Congress should require operators and landowners to plan and implement conservation systems for all land planted with annual crops in order to be eligible for farm program benefits and crop insurance subsidies.<sup>27</sup> These conservation systems must help protect carbon stocks by ensuring that soil erosion on annually planted cropland does not exceed the soil loss tolerance level—the maximum annual rate of soil erosion possible without causing a decline in long-term

<sup>24</sup> 16 U.S.C. §§ 3811-3812 (2014).

<sup>25</sup> 16 U.S.C. § 3821. Wetlands drained or filled before December 23, 1985 are not protected. 16 U.S.C. § 3822(b)(1)(A).

<sup>26</sup> Wetlands are estimated to emit between 405 and 1215 metric tons of CO<sub>2</sub> eq. per acre when converted to agricultural land. Richard Plevin et al., Greenhouse Gas Emissions from Biofuels’ Indirect Land Use Change Are Uncertain But May Be Much Greater than Previously Estimated, 44 ENVTL. SCI. & TECH. 8015, 8018 (2010), <https://pubs.acs.org/doi/ipdf/10.1021/es101946t>.

<sup>27</sup> See generally Food & Farm Act, H.R. 4425, 115<sup>th</sup> Cong. §§ 201-206 (2017) (proposing to extend conservation plan requirements to all cropland planted with row crops, not just highly erodible land as under the current law); NAT’L SUSTAINABLE AGRIC. COALITION, *supra* note 18, at 32-33, 44-45, 84 (discussing the importance of comprehensive conservation plans for effective stewardship); ENVTL. WORKING GRP., LESS FARM POLLUTION, MORE CLEAN WATER: AN AGENDA FOR CONSERVATION IN THE 2018 FARM BILL 2 (2017), [https://cdn3.ewg.org/sites/default/files/u352/EWG\\_Report\\_Conservation\\_C06.pdf?\\_ga=2.167498046.187388472.1525043603-1751440026.1525043603](https://cdn3.ewg.org/sites/default/files/u352/EWG_Report_Conservation_C06.pdf?_ga=2.167498046.187388472.1525043603-1751440026.1525043603), (advocating for extending conservation plan requirements to all annually tilled land).

productivity;<sup>28</sup> address gully erosion, which is responsible for up to 40 percent of soil loss in the United States;<sup>29</sup> and maintain waterway buffers to reduce runoff and nitrous oxide emissions.<sup>30</sup> These steps will greatly improve soil and water quality locally and throughout the country, resulting, among other benefits, in significantly reduced climate impacts.

The USDA Inspector General has also found that the department has failed to consistently enforce current conservation requirements.<sup>31</sup> Congress should adequately fund conservation compliance enforcement and increase USDA's technical assistance capacity to ensure that providers know how to comply.<sup>32</sup> Finally, Congress should require USDA to report compliance and enforcement data to Congress, allowing policymakers and the public to evaluate USDA's enforcement efforts.<sup>33</sup>

Just as USDA programs should, at a minimum, preserve environmentally sensitive land, they should also protect small- and medium-scale farms, which provide a number of services to rural

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<sup>28</sup> See generally H.R. 4425 (proposing to require conservation plans to maintain soil erosion levels at or below the soil loss tolerance level); NAT'L SUSTAINABLE AGRIC. COALITION, *supra* note 18, at 36 (urging Congress to require conservation plans for highly erodible land to achieve soil erosion levels at or below the soil tolerance level); ENVTL. WORKING GRP., *supra* note 27 (recommending that Congress integrate the soil tolerance level into conservation plans).

<sup>29</sup> See generally H.R. 4425 (proposing to require conservation plans to address ephemeral gully erosion); NAT'L SUSTAINABLE AGRIC. COALITION, *supra* note 18, at 37 (discussing USDA's inadequate efforts to reduce gully erosion and proposing reforms); ENVTL. WORKING GRP., *supra* note 27, at 3 (recommending that conservation plans prevent gully erosion).

<sup>30</sup> See generally H.R. 4425 (requiring 50 feet of perennial vegetation between annually tilled land and intermittent or perennial waterways); ENVTL. WORKING GRP., *supra* note 27 (proposing that the 2018 Farm Bill require conservation plans to include 50 feet of perennial vegetation between annually tilled land and waterways).

<sup>31</sup> The report also found that the agency's auditing process had completely bypassed at least 10 states in 2015, apparently in error. U.S. DEP'T OF AGRIC., USDA MONITORING OF HIGHLY ERODIBLE LANDS AND WETLAND CONSERVATION VIOLATIONS, AUDIT REP. 50601-0005-31 3 (2016), <https://www.usda.gov/oig/webdocs/50601-0005-31.pdf>; see also Laurie Ristino & Gabriela Steier, *Losing Ground: A Clarion Call for Food System Reform to Ensure a Food Secure Future*, 42 COLUM. J. ENVTL. L. 59, 96-102 (2016) (discussing flaws in conservation compliance enforcement).

<sup>32</sup> See FARM BILL LAW ENTERPRISE, *supra* note 27 (detailing possible improvements in enforcement and compliance within the conservation compliance regime).

<sup>33</sup> Both FBLE and NSAC also recommend mandated collection and reporting of conservation compliance data. See FARM BILL LAW ENTERPRISE, *supra* note 27; NAT'L SUSTAINABLE AGRIC. COALITION, *supra* note 18, at 36.

communities,<sup>34</sup> reduce wealth inequality,<sup>35</sup> and have been found to be disproportionately likely to adopt sustainable practices.<sup>36</sup> Currently, however, USDA programs disproportionately favor large-scale producers and help drive land consolidation. The top 7 percent of producers, for example, received almost half of all government farm payments in 2012.<sup>37</sup> While some programs currently cap payments, many, including crop insurance, do not, and existing caps are too high. Congress should place a cap on payments across all farm safety net and conservation programs at \$150,000 or lower, and use the resulting savings to increase support for sustainable small- and medium-sized farms.

### *3. Require crop insurance providers to base premiums on soil health*

In an era when the public is growing increasingly skeptical of industrial agriculture and farm subsidies, crop insurance has become a politically palatable way for the federal government to subsidize large-scale operations. The program is portrayed as, and often perceived to be, a safety net for farmers in the event of catastrophic crop failure. While about 16 percent of federal crop insurance contracts are limited to this type of protection, the vast majority, 84 percent, also include revenue protections.<sup>38</sup> These revenue-based policies guarantee enrolled farmers a certain level of income regardless of market prices or their crop productivity.<sup>39</sup> Further, crop insurance premiums are themselves highly subsidized. A 2016 analysis of crop insurance

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<sup>34</sup> See Peter Rosset, *The Multiple Functions and Benefits of Small Farm Agriculture in the Context of Global Trade Negotiations*, 43 DEVELOPMENT 77, 81 (2000); see generally Linda Lobao & Curtis W. Stofferahn, *The Community Effects of Industrialized Farming: Social Science Research and Challenges to Corporate Farming Laws*, 25 AGRIC. & HUMAN VALUES 219 (2008) (focusing on the consequences of farmland consolidation and industrialized agriculture for rural communities).

<sup>35</sup> See Rosset, *supra* note 34, at 78-79.

<sup>36</sup> *Id.* at 80-81; Lobao & Stofferahn, *supra* note 34, at 226-28.

<sup>37</sup> U.S. DEP'T OF AGRIC., *supra* note 15, at 94, 100 tbl. 65.

<sup>38</sup> DENNIS SHIELDS, CONG. RESEARCH SERV., *Federal Crop Insurance: Background 2* (2015), <https://fas.org/sgp/crs/misc/R40532.pdf>.

<sup>39</sup> *Id.*

policies, for example, found that farmers realized an annual average return of 120 percent on their policies between 2000 and 2014.<sup>40</sup> These extraordinarily high crop insurance premium subsidies have increased agricultural emissions by incentivizing agricultural production on marginal land, while also increasing land consolidation.<sup>41</sup>

Crop insurance should do the opposite. Rather than encouraging cultivation of marginal lands, which is financially risky, and discouraging climate-friendly practices such as cover crops, Congress should create financial incentives for practices that will make the system more secure. It should make soil health—of which soil carbon content is a key factor—a criterion in determining insurance premiums, rewarding those who act as good stewards of the land. This would discourage planting on poor quality land (which is often the most ecologically important) and create financial incentives for practices that both reduce climate change and improve resilience to droughts, floods, and the like, thus reducing the very risks that the program seeks to address. All this would, in turn, reduce federal expenditures.<sup>42</sup> Congress should also ensure that USDA and researchers have access to soil health data, allowing them to quantify the impact of different sustainability practices on soil health.<sup>43</sup>

#### *4. Turn the Conservation Reserve Program into a true land retirement program*

The Conservation Reserve Program (“CRP”) pays farmers for taking environmentally sensitive land out of production for 10-

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<sup>40</sup> BRUCE A. BABCOCK, ENVTL. WORKING GRP., *Crop Insurance: A Lottery That’s a Sure Bet 3* (2016), [https://static.ewg.org/reports/2016/federal\\_crop\\_insurance\\_lottery/EWG\\_CropInsuranceLottery.pdf?\\_ga=2.90653337.2042648376.1516647185-417038531.1514752376](https://static.ewg.org/reports/2016/federal_crop_insurance_lottery/EWG_CropInsuranceLottery.pdf?_ga=2.90653337.2042648376.1516647185-417038531.1514752376).

<sup>41</sup> See, e.g., DANIEL SUMNER & CARL ZULAUF, COUNCIL ON FOOD, AGRIC. & RES. ECON., *ECONOMIC & ENVIRONMENTAL EFFECTS OF AGRICULTURAL INSURANCE PROGRAMS* (2012), [http://ageconsearch.umn.edu/bitstream/156622/2/Sumner-Zulauf\\_Final.pdf](http://ageconsearch.umn.edu/bitstream/156622/2/Sumner-Zulauf_Final.pdf).

<sup>42</sup> See Joshua D. Woodard & Leslie J. Verteramo-Chiu, *Efficiency Impacts of Utilizing Soil Data in the Pricing of the Federal Crop Insurance Program*, 99 *AMER. J. AGRIC. ECON.* 757, 758 (2017).

<sup>43</sup> *Id.* at 769.

15 years.<sup>44</sup> Out of the three main conservation programs, Congress gave it the largest allocation in the 2014 bill, resulting in roughly \$1.8 billion annually.<sup>45</sup> USDA estimated that CRP sequestered over 43 million metric tons of carbon dioxide emissions in 2014, mitigating about 7 percent of agriculture’s greenhouse gas emissions that year.<sup>46</sup> This is misleading, however, since many producers bring their CRP acres back into production after their contracts expire, quickly releasing any carbon stored during the contract’s term. A 2016 study found that expired CRP land was 10 times more likely to be converted into crop production than to be shifted into other set-aside conservation programs.<sup>47</sup> Between 2007 and 2014, for example, an estimated 15.8 million acres previously protected by CRP—at a cost of \$7.3 billion—were returned to agricultural production.<sup>48</sup> Researchers have also found that some farmers compensate for the loss of production on CRP lands by converting marginal land to crop production.<sup>49</sup>

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<sup>44</sup> *Conservation Reserve Program*, U.S. DEP’T OF AGRIC., FARM SERVICE AGENCY, <https://www.fsa.usda.gov/programs-and-services/conservation-programs/conservation-reserve-program/> (last visited Apr. 28, 2018).

<sup>45</sup> See CONG. BUDGET OFFICE, CBO’s March 2015 Baseline for Farm Programs 26 (2015), <https://www.cbo.gov/sites/default/files/recurringdata/51317-2015-03-usda.pdf> [hereinafter CBO’s MARCH 2015 BASELINE FOR FARM PROGRAMS]; CONG. BUDGET OFFICE, CBO’s March 2016 Baseline for Farm Programs 26 (2016), <https://www.cbo.gov/sites/default/files/recurringdata/51317-2016-03-usda.pdf> [hereinafter CBO’s MARCH 2016 BASELINE FOR FARM PROGRAMS]; CONG. BUDGET OFFICE, CBO’s June 2017 Baseline for Farm Programs 28 (2017), <https://www.cbo.gov/sites/default/files/recurringdata/51317-2017-06-usda.pdf> [hereinafter CBO’s JUNE 2017 BASELINE FOR FARM PROGRAMS].

<sup>46</sup> U.S. DEP’T OF AGRIC., FARM SERV. AGENCY STRATEGIC PLAN: FISCAL YEAR 2016-2018 UPDATE 25, 28, <https://www.fsa.usda.gov/Assets/USDA-FSA-Public/usdafiles/AboutFSA/fsa-strategic-plan-2016-2018.pdf>.

<sup>47</sup> Philip E. Morefield et al., Grasslands, Wetlands, and Agriculture: The Fate of Land from the Conservation Reserve Program in the Midwestern United States, 11 ENVTL. RES. LETTERS 1, 5 (2016).

<sup>48</sup> ENVTL. WORKING GRP., *supra* note at 27 at 7.

<sup>49</sup> See JunJie Wu, Slippage Effects of the Conservation Reserve Program, 82 J. AGRIC. ECONOMICS 979, 990 (2000) (finding that for each 100 acres of land enrolled in CRP, another 20 acres were put into production); David A. Fleming, *Slippage Effects of Land Based Policies: Evaluating the Conservation Reserve Program Using Satellite Imagery*, 93 PAPERS REGIONAL SCI. S167, S176 (2013) (observing varying rates of slippage according to land cover using satellite data); Nancy Leathers & Lisa M.B. Harrington, *Effectiveness of Conservation Reserve Programs and Land “Slippage” in Southwestern Kansas*, 52 PROFESSIONAL GEOGRAPHER 83, 83-93 (2004) (finding that slippage greatly reduce CRP’s effectiveness in Kansas). *Contra* Michael J. Roberts & Shawn Bucholtz, Slippage in The Conservation Reserve Program or Spurious

In order to effectively reduce agricultural emissions, Congress should restructure CRP in two ways. First, satellite imagery and other modern technology should be used to identify the most sensitive lands (such as former wetlands or stream beds), which should then be prioritized. Second, the CRP should provide farmers with either permanent easements or 30-year easements that are linked to permanent set-asides, effectively expanding the current Agricultural Conservation Easement Program (“ACEP”).<sup>50</sup> Farmers who complete a 30-year easement contract, for example, could be given an incentive to sign a permanent contract to keep the land from being cultivated. This would change CRP to a program that both supplements the incomes of farmers and provides sustained water quality and climate benefits.

#### 5. *End EQIP subsidies for industrial operations*

The Environmental Quality Incentives Program (“EQIP”) offers farmers funding and technical assistance for developing and implementing single conservation practices.<sup>51</sup>

In recent years, Congress has provided EQIP with approximately \$1.4 billion annually.<sup>52</sup> More than a quarter of EQIP payments went to support waste storage facilities in large-scale animal production facilities (legally termed “concentrated animal feeding operations” or “CAFO”s) and irrigation systems. Doing so has the effect of subsidizing large-scale, environmentally degrading practices.<sup>53</sup>

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Correlation? A Comment, 87 AMER. J. AGRIC. ECONOMICS 244, 250 (2005) (finding no evidence of slippage using an alternative model).

<sup>50</sup> USDA currently offers farmers long-term and permanent easements through ACEP, but funding for its component initiatives has been cut substantially in recent years and the program now receives between 8 to 15 percent of CRP’s funding annually. See CONG. BUDGET OFFICE, *supra* note 45.

<sup>51</sup> *Environmental Quality Incentives Program*, U.S. DEP’T OF AGRIC., NATURAL RESOURCES CONSERVATION SERVICE, <https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/eqip/> (last visited Apr. 28, 2018).

<sup>52</sup> See, e.g., CBO’S JUNE 2017 BASELINE FOR FARM PROGRAMS, *supra* note 45.

<sup>53</sup> See, e.g., Andrew Martin, *In The Farm Bill, A Creature from the Black Lagoon*, N.Y. TIMES (Jan. 13, 2008), <http://www.nytimes.com/2008/01/13/business/13feed.html> (suggesting that the program’s name should be changed to the “Factory Farm Incentive Program”); Tom Laskaway, *Stop The Environmental Subsidy for Factory Farms*, GRIST (Apr. 17, 2009), <http://grist.org/article/stop-the-environmental-subsidy->

When Congress created EQIP in 1996, it required that at least 50 percent of the program's total funding go toward livestock operations.<sup>54</sup> However, it excluded large confined livestock operations,<sup>55</sup> and limited payments to a maximum of \$50,000 in most cases,<sup>56</sup> ensuring that EQIP funds would benefit smaller operations. In the 2002 Farm Bill, Congress eliminated the restriction against large confined livestock operations and raised the payment cap to \$450,000,<sup>57</sup> where it currently stands.<sup>58</sup> As a result, waste storage facilities for CAFOs received a larger share of payments—over \$100 million—than any other single practice supported by EQIP.<sup>59</sup> Since CAFOs depend on the production of vast amounts of grain—the production of which causes significant air and water pollution—and concentrate manure in ways that create further air and water pollution, supporting CAFOs effectively subsidizes a greenhouse gas-intensive form of animal production that also undermines rural economies and animal welfare.<sup>60</sup>

The largest share of EQIP payments—\$181 million in 2016<sup>61</sup>—however, goes to a bundle of practices designed to improve irrigation systems, such as the installation of new

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[for-factory-farms/](#); *CAFOs and Cover Crops: A Closer Look at 2015 EQIP Dollars*, NAT'L SUSTAINABLE AGRIC. COAL. BLOG (Nov. 20, 2015), <http://sustainableagriculture.net/blog/fy15-general-eqip-update/>.

<sup>54</sup> Federal Agriculture Improvement and Reform Act of 1996, Pub. L. No. 104-127, §1241(2), 110 Stat. 996-97 (1996).

<sup>55</sup> *Id.*

<sup>56</sup> *Id.*

<sup>57</sup> Farm Security and Rural Investment Act of 2002, Pub. L. No. 107-171, §§ 1240B-1240G, 116 Stat. 254-57 (2002).

<sup>58</sup> The cap was lowered to \$300,000 in the 2008 Farm Bill, but was ultimately raised back to \$450,000 in the 2014 Farm Bill, Food, Conservation, and Energy Act of 2008, Pub. L. No. 110-234, § 2508, 122 Stat. 923, 1063 (2008); Agricultural Act of 2014, Pub. L. 113-79, §2206, 128 Stat. 649, 730 (2014) (amending § 1240G).

<sup>59</sup> Melissa Bailey & Kathleen Merrigan, *Rating Sustainability: An Opinion Survey of National Conservation Practices Funded Through the Environmental Quality Incentives Program*, 65 J. SOIL & WATER CONSERVATION 21A, 23A (2010).

<sup>60</sup> CARRIE HRIBAR, NAT'L ASSOC. OF LOCAL BOARDS OF HEALTH, UNDERSTANDING CONCENTRATED ANIMAL FEEDING OPERATIONS AND THEIR IMPACT ON COMMUNITIES 7-10 (2010), [https://www.cdc.gov/nceh/ehs/docs/understanding\\_cafos\\_nalboh.pdf](https://www.cdc.gov/nceh/ehs/docs/understanding_cafos_nalboh.pdf).

<sup>61</sup> NAT'L SUSTAINABLE AGRIC. COAL., *supra* note 18, at 52.



irrigation pipelines or reservoirs.<sup>62</sup> Instead of using EQIP funding just to improve the efficiency of irrigation, however, farmers often use their savings to expand irrigated crop production, switch to more water-intensive crops, or both.<sup>63</sup> This leads to land conversion, a major source of greenhouse gas emissions.<sup>64</sup>

Farmers deserve support for installing environmentally friendly infrastructure, but EQIP must be better tailored. Congress should prohibit funding for new and expanding CAFOs. It should also contractually bar operators receiving EQIP payments for water conservation from expanding irrigated crop production. The resulting savings should be redirected to practices used in sustainable systems, ensuring long-term benefits to the environment and climate.

#### 6. *Focus the Conservation Stewardship Program on environmental benefits*

The Conservation Stewardship Program (“CSP”) is an incentive-based working lands program, designed to make active farms more environmentally friendly.<sup>65</sup> Farmers participating

<sup>62</sup> See *Environmental Quality Incentives Program (EQIP) practice suite payments in the United States, 1997-2015*, ENVTL. WORKING GRP., [https://conservation.ewg.org/eqip\\_practice\\_suite.php?fips=00000&regionname=theUnitedStates](https://conservation.ewg.org/eqip_practice_suite.php?fips=00000&regionname=theUnitedStates) (last visited Apr. 29, 2018) (between 1997 and 2015 over \$1.6 billion went to fund irrigation systems through EQIP).

<sup>63</sup> See generally Frank Ward & Manuel Pulido-Velazquez, *Water Conservation in Irrigation Can Increase Water Use*, 105 PROC. NAT’L ACAD. SCI. U.S. AM. 18215 (2008); Lisa Pfeiffer & C.-Y. Cynthia Lin, *Does Efficient Irrigation Technology Lead to Reduced Groundwater Extraction? Empirical Evidence*, 67 J. ENV’T L ECON. MGMT. 189 (2014).

<sup>64</sup> See EMILY CASSIDY, ENVTL. WORKING GRP., *ETHANOL’S BROKEN PROMISE: USING LESS CORN ETHANOL REDUCES GREENHOUSE GAS EMISSIONS 4* (Nils Bruzelius ed. 2014), <http://www.pnas.org/content/pnas/105/47/18215.full.pdf>. The Environmental Working Group, for instance, estimates that the conversion of wetlands to farmland between 2008 and 2012 resulted in greenhouse gas emissions totaling 25 to 74 million metric tons of carbon dioxide equivalent annually. *Id.* Others have studied the conversion of native grasslands to farmland, in large part to supply corn to ethanol plants, and similarly found significant soil carbon losses. Tyler Lark et al., *Cropland Expansion Outpaces Agricultural and Biofuel Policies in the United States*, 10 ENVTL. RES. LETTERS 1, 5 (2015).

<sup>65</sup> EQIP, in contrast, is a cost-share working lands conservation program. CSP may be merged with EQIP in the upcoming farm bill, however, a similar performance-based payment program will likely remain in some form. *Conservation Stewardship Program (CSP)*, U.S. DEP’T OF AGRIC., NATURAL RESOURCES CONSERVATION SERVICE, <https://www.nrcs.usda.gov/wps/portal/nrcs/main/oh/programs/financial/csp/> (last

in CSP enroll their entire operation in a contract to plan and adopt comprehensive conservation measures. While CSP has the smallest budget of the three main conservation programs—it has received about \$1.1 billion annually since the last farm bill<sup>66</sup>—CSP is the largest USDA conservation program on an acreage basis.<sup>67</sup> Unfortunately, recent changes to CSP have deemphasized environmental considerations in USDA’s application and payment determinations.

Congress should require that CSP payments encourage practices with the most environmental and climate benefits. Now, payments for many CSP practices that increase crop diversity and soil health, such as Resource Conserving Crop Rotations (“RCCR”s) and Soil Health Crop Rotations, are actually lower than payments for standard enhancements.<sup>68</sup> Congress should strengthen the CSP sustainability standards for participation; increase the importance of environmental benefits in the application process; and raise payment rates for practices that provide the greatest climate benefits.

### **Transforming the farm bill**

Agricultural land, which covers more than 60 percent of the continental United States,<sup>69</sup> is capable of producing a number of public goods in addition to agricultural commodities, including environmental goods, such as biodiversity, water quality, and climate stability, and social goods such as rural vitality, animal welfare, and food security.<sup>70</sup> The farm bill should move beyond its traditional focus on the production of agricultural

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visited Apr. 28, 2018).

<sup>66</sup> See CBO’s JUNE 2017 BASELINE FOR FARM PROGRAMS, *supra* note 45.

<sup>67</sup> *Conservation Stewardship Program (CSP)*, *supra* note 65.

<sup>68</sup> See U.S. DEP’T OF AGRIC., NATURAL RESOURCES CONSERVATION SERVICE, PAYMENT SCHEDULE HANDBOOK, PART C § 600.13(F) (2016), <https://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=40186.wba>.

<sup>69</sup> CYNTHIA NICKERSON ET AL., U.S. DEP’T. OF AGRIC., ECON. RES. SERV., MAJOR USES OF LAND IN THE UNITED STATES, 2007 4 (2011), [https://www.ers.usda.gov/webdocs/publications/44625/11159\\_cib89\\_2\\_.pdf?v=41055](https://www.ers.usda.gov/webdocs/publications/44625/11159_cib89_2_.pdf?v=41055).

<sup>70</sup> FRANCESCO VANNI, *Agriculture and Public Goods: The Role of Collective Action* 119 (Springer 2014).

commodities and treat agriculture's other public goods with equal consideration.<sup>71</sup> In addition to the specific changes recommended above, Congress should develop a robust program to pay farmers for these important stewardship services.

The federal government currently incentivizes farms to grow crops that are used, in a highly inefficient manner, to produce corn ethanol, sweeteners, and highly processed food products.<sup>72</sup> Why not encourage farms to produce what the country needs more of? Congress should develop a program to pay farmers for permanent carbon sequestration, which measures would also protect water quality and quantity. The farm safety net should not just enrich the largest farms, but protect the environment, mitigate climate change, grow healthy food, and strengthen rural communities. Decarbonizing the farm bill would not only help stabilize our climate, but would also transform rural America into a healthier, more sustainable, and equitable place.

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<sup>71</sup> This would not necessarily result in a decline in production or an increase in land use, although funding for research in agroecological methods would need to be increased in order to maintain productivity.

<sup>72</sup> While the production of these commodity crops may be efficient when measured by inputs (such as labor) or yield, their use is grossly inefficient when human needs, such as nutritious food, are considered. Lehner & Rosenberg, *supra* note 18, at 10853. A 2013 study found that 67 percent of calories and 80 percent of protein in crops produced in the United States are diverted to animal feed. Emily Cassidy et al., *Redefining Agricultural Yields: From Tonnes to People Nourished Per Hectare*, 8 ENVTL. RES. LETTERS 1, 4 (2013). An additional 6 percent of both calories and protein of U.S. crops were diverted to a biofuel production—a share that has likely increased significantly since the enactment of the Renewable Fuel Standard. *Id.* Finally, an estimated 75 percent of the average American's diet comes from processed or ultra-processed foods, which are low in nutritional quality. Jennifer Poti et al., *Is the Degree of Food Processing and Convenience Linked With the Nutritional Quality of Foods Purchased by US Households*, 101 AM. J. CLINICAL NUTRITION 1251, 1251 (2015). Some researchers have started to refer to this diet as a “commodity-based diet” due to its reliance on commodity crop production. See David Ludwig, *Commentary, Technology, Diet, and the Burden of Chronic Disease*, 305 JAMA 1352, 1352 (2011).