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Small Family Farms and Natural Disasters: Natural Disasters Disproportionately Hurt Small Farms, but Should the Government Care?

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Small Family Farms and Natural Disasters: Natural Disasters Disproportionately Hurt Small Farms, but Should the Government Care?

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Summer of 1995 was a year for the record books in Hermiston, a small farming community in Oregon famous for its watermelons.¹ Those old enough for memories will not forget the major hailstorm that hit. It was brief, only fifteen minutes, and left no fatalities.² But the local crops were a complete loss, most notably the famous watermelons, and damages were in the tens of millions of dollars.³ The storm was significant enough to cause many small family farms to go under. Fifth-generation farmer Brian Wolfe lost all his crops in fifteen minutes. In his words:

[W]e had that catastrophic event, and it was life-changing. I went from operating a farm of—being [sic] able to take some risk . . . to minimizing the risk. So after that, I didn't raise any more potatoes, myself. . . . And some of those other high-expensive crops that you can, if you get it you can do pretty good, and if you don't, why, there's always next year, but I didn't feel like I had next year.

. . . [I]t changed the way I operated 'til up to today's times.⁴

Natural disasters hit farms hard.⁵ With a commodity that relies on weather to succeed, a natural disaster can be devastating. In the United States, agricultural losses from disasters in 2017 were estimated at around \$5.7 billion.⁶ Approximately 53% of the nation's

1. *Oregon's Top 10 Weather Events of the 1900s*, W. REG'L CLIMATE CTR., https://wrcc.dri.edu/Climate/extremes_or.php#top7 (last visited Oct. 17, 2018).

2. *Bryan Wolfe Oral Interview Video: A Fifth-Generation Farmer and Rancher*, OR. ST. U. SESQUICENTENNIAL ORAL HIST. PROJECT (Oct. 31, 2014, 1:30 PM), <http://scarc.library.oregonstate.edu/oh150/wolfe/video-wolfe.html> (interview by Chris Petersen).

3. See *Oregon's Top 10 Weather Events of the 1900s*, *supra* note 1.

4. *Bryan Wolfe Oral Interview Video*, *supra* note 2.

5. For the purposes of this Note I will use the USDA definition of *farm*: "A farm is defined as any place from which \$1,000 or more of agricultural products were produced and sold, or normally would have been sold, during the year." *Glossary*, ECON. RESEARCH SERV., <https://www.ers.usda.gov/topics/farm-economy/farm-household-well-being/glossary/#farm> (last updated Nov. 30, 2018). "'Agricultural products' means agricultural, horticultural, viticultural, and dairy products, livestock and the products thereof, the products of poultry and bee raising, the edible products of forestry, and any and all products raised or produced on farms and processed or manufactured products thereof, transported or intended to be transported in interstate and/or foreign commerce." 7 U.S.C.A. § 451 (West 2018).

Though I reference horticulture farmers frequently, other agricultural products and producers are also included in the analysis.

6. Sam Bloch, *2017's Natural Disasters Cost American Agriculture Over \$5 Billion*, NEW FOOD ECON. (Jan. 4, 2018), <https://newfoodeconomy.org/2017-natural-disasters-agriculture-damage-5-billion/>.

sugar production was affected by natural disasters.⁷ Puerto Rico lost approximately 80% of its crop value. The island also suffered an estimated \$1.8 billion in losses to its critical agricultural infrastructure.⁸ Although 2017 was a record year for natural disasters, the estimate is useful to highlight how much agriculture is affected by natural disasters.

Farmers are well aware of their reliance on weather and the lasting impact of natural disasters⁹ on their livelihood, but most lawmakers do not understand the significant consequences of disasters on farmers' lives. There is minimal government disaster aid for farmers after disasters.¹⁰ The majority of states have no programs in place to protect farmers after disasters, so existing financial support is federally funded.¹¹ Federal Crop Insurance (FCI) and federal disaster relief bills, the main options, do not adequately cover the losses.¹² For example, of the \$81 billion in emergency funds approved in December 2017 by the House to provide relief after Hurricanes Harvey, Irma, and Maria, as well as various 2017 wildfires, only \$2.6 billion was reserved for losses to the agricultural sector.¹³ This amounts to less than half of estimated damages. Some farmers may have financial help if insured under

7. *Id.*

8. *Id.* (estimating the value of damaged storage facilities, irrigation systems, fences, and other agricultural infrastructure).

9. For the purposes of this Note, *natural disasters* is defined by the FEMA standard set in the Stafford Act for *major disasters*, namely, "any natural catastrophe (including any hurricane, tornado, storm, high water, winddriven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, or drought), or, regardless of cause, any fire, flood, or explosion, in any part of the United States, which in the determination of the President causes damage of sufficient severity and magnitude to warrant major disaster assistance under the Stafford Act to supplement the efforts and available resources of States, local governments, and disaster relief organizations in alleviating the damage, loss, hardship, or suffering caused thereby." 42 U.S.C.A. § 5122 (West 2018); *see also* 6 U.S.C.A. § 313 (West 2018).

10. *See infra* Part I.

11. *See, e.g.*, UTAH CODE ANN. § 53-2a (West 2018) (Emergency Management Act, providing no disaster relief for farms in emergency response statutes); *Farmer Resource Network Online Directory*, FARM AID, <https://www.farmaid.org/our-work/resources-for-farmers/farmer-resource-network/> (last visited Sept. 14, 2018). Extensive searching in state codes and Farm Aid's online disaster search tool yielded no results for state-funded programs.

12. *See infra* Part I.

13. H.R. 4667, 115th Cong. (2017).

federal programs, but coverage is limited, and damages can cause years of financial loss.¹⁴

Natural disasters affect small family farms differently than large corporate farms. Financial losses from disasters can be absorbed by large corporate farms because they can more easily distribute risk. Unfortunately, small family farms often fall by the wayside. On small family farms the “operator and family provide[] over half the labor, management, and equity capital.”¹⁵ These farms typically engage in more “localized, small-scale, agricultural operations.”¹⁶ The United States Department of Agriculture (USDA) divides small family farms into three main groups: (1) farms with an operator who has a primary occupation other than farming; (2) farms with an operator whose primary occupation is farming (these include farms of low sales, less than \$150,000, and moderate sales, \$150,000 to \$349,000); and (3) retirement farms.¹⁷ Within the context of this Note, *small family farms* generally refers to the second type, those with gross cash farm income less than \$350,000 per year. This category of farms comprises 90% of all U.S. farms.¹⁸ These are high-risk ventures.¹⁹ Typically, farmers go into debt in the spring for a payoff in the fall. They operate with small profit margins that are susceptible to significant loss from a variety of factors, including natural disasters.

14. FOOD & AGRIC. ORG. OF THE U.N. DIRECTOR-GENERAL, 2017: THE IMPACT OF DISASTERS AND CRISES ON AGRICULTURE AND FOOD SECURITY, at x (2018) (“Disasters impact agriculture beyond the short-term. The sector often endures long-lasting and multi-pronged consequences such as loss of harvest and livestock, outbreaks of disease, and destruction of rural infrastructure and irrigation systems.”).

15. Luther Tweeten, *Agricultural Industrialization: For Better or Worse?* 2 (The Ohio State Univ. Dep’t of Agric., Envtl., & Dev. Econ., Anderson Chair Occasional Paper ESO #2404, 1998).

16. J. Michael Boomershine, Jr., Note, *The Battle over America’s Farmlands: Corporate Farming Practices and Legislative Attempts at Preserving the Family Farm*, 21 DRAKE J. AGRIC. L. 361, 363 (2016).

17. U.S. DEP’T OF AGRIC., ACH 12-34, 2012 CENSUS OF AGRICULTURE HIGHLIGHTS: SMALL FARMS 1, 2 (2016) [hereinafter 2012 CENSUS SMALL FARM HIGHLIGHTS].

18. *Distribution of Farms and Value of Production Vary by Farm Type*, U.S. DEP’T AGRIC. ECON. RESEARCH SERV., <https://www.ers.usda.gov/data-products/chart-gallery/gallery/chart-detail/?chartId=58288> (last updated Nov. 29, 2017).

19. ROBERT A. HOPPE, U.S. DEP’T OF AGRIC. ECON. RESEARCH SERV., EIB-132, STRUCTURE AND FINANCES OF U.S. FARMS: FAMILY FARM REPORT, 2014 EDITION 38–40 (2014) [hereinafter 2014 FAMILY FARM REPORT].

Corporate farms are better equipped to survive natural disasters than small family farms. Corporate farms are large-scale farming operations that engage in corporate practices such as vertical integration, factory farming, factory production, and “other practices consistent with corporate culture.”²⁰ These operations tend to have higher profits and returns because they produce mass quantities, thus lowering overall production costs per outcome unit.²¹ As a recent USDA study of farm structure concluded, “larger farms utilize labor and capital more intensively, which provide them with the primary source of their financial advantage.”²² Therefore, while 88% of all farms in the United States are small family farms, they comprise only 5% of the country’s net farm income.²³ For these reasons, small family farms are more vulnerable to insuperable financial loss when a natural disaster strikes. However, federal disaster aid does not differentiate between small family farms and corporate farms when providing assistance. Research indicates the federal support given to small family farms tends to be inadequate and natural disasters often result in bankruptcy or occupation change, as illustrated by Brian Wolfe’s story in the opening paragraph.²⁴ But, is this something the government should remedy?

This Note offers an examination of the issues surrounding small family farms when natural disasters strike and assesses what role, if any, the government should play in protecting these entities in disasters. I posit that small family farms fill a vital role in sustaining communities and protecting from future disaster loss. This Note argues that the federal government should amend farm disaster aid to protect this subset of farms. Part I provides an overview of current federal support for farms in a disaster. Part II highlights the needs of small family farms in disasters as compared with corporate farms and how small family farms suffer disproportionately more losses in disasters. Part III provides an analysis of risks in deciding whether it is a fiscally responsible choice for the government

20. Boomershine, *supra* note 16, at 363–64.

21. Tweeten, *supra* note 15, at 2–4.

22. JAMES M. MACDONALD ET AL., U.S. DEP’T OF AGRIC. ECON. RESEARCH SERV., ERR-152, FARM SIZE AND THE ORGANIZATION OF U.S. CROP FARMING, at iv (2013).

23. 2012 CENSUS SMALL FARM HIGHLIGHTS, *supra* note 17, at 1.

24. *See infra* Part I; Part IV.

to provide more financial support and protection to family farms in natural disasters. Part IV offers possible legislative solutions to provide more support for small family farms without promoting risk-inducing behaviors and subsidizing bad farming practices. This comprehensive evaluation demonstrates that while small family farms do not play a large role as market suppliers, they contribute in other ways that merit greater disaster protection by the federal government.

I. UNDERSTANDING ACCESS TO FEDERAL DISASTER AID FOR FARMS

Federal disaster aid has become a significant survival tool for farmers yet fails to adequately support small family farms. Disaster assistance to farmers has undergone major revisions since the program was initially established. Despite the development of disaster aid, it has not managed to adjust to the changing landscape of farm producers, so small family farms are often left without protection.

A. Federal Crop Insurance Program

Crop disaster aid began in response to public need, and its adaptations continue to reflect that approach. The first federal approach to farming disaster aid was in the late 1930s with the Federal Crop Insurance Act.²⁵ Initially created as an experiment “to help agriculture recover from the combined effects of the Great Depression and the Dust Bowl,” the program was entirely government run through the Federal Crop Insurance Corporation (FCIC), and insurance coverage was limited to major crops in high production areas.²⁶ Because of this, enrollment numbers were low and producers relied on other tools to manage risk.²⁷

25. David F. Rendahl, Comment, *Federal Crop Insurance: Friend or Foe?*, 4 SAN JOAQUIN AGRIC. L. REV. 185, 185–86 (1994).

26. *The Basics of Crop Insurance*, PRO AG, <https://www.proag.com/basics-of-crop-insurance/> (last visited Nov. 15, 2018).

27. ERIK J. O'DONOGHUE, U.S. DEP'T OF AGRIC. ECON. RESEARCH SERV., ERR-169, THE EFFECTS OF PREMIUM SUBSIDIES ON DEMAND FOR CROP INSURANCE (2014).

1. 1980 federal crop insurance reform

Throughout the mid-twentieth century the need for increased risk protection grew, and Federal Crop Insurance turned from an unreliable experiment to a legitimate program in 1980. Legislators recognized that financial protection was necessary because farming is a high-risk venture that serves a national interest.²⁸ The goal was to expand the role of governmental support for privately owned crops and “promote the national welfare by improving the economic stability of agriculture through a sound system of crop insurance.”²⁹ Thus, Federal Crop Insurance expanded to cover more crops and regions and enlisted private insurers through reinsurance agreements.³⁰

Prior to 1980, farmers purchased crop insurance directly from the FCIC.³¹ Due to advances in the private insurance industry, the 1980 amendments authorized the FCIC to enter into reinsurance agreements with private insurers, consequently cutting administrative costs and expanding availability.³² Although the 1980 amendments increased the number of insurable commodities and made insurance available in additional regions, the program did not achieve the levels of participation Congress anticipated.³³

28. H.R. REP. NO. 96-430, at 8-9 (1980), *reprinted in* 1980 U.S.C.C.A.N. 3068, 3071. The legislative history states,

Agricultural producers are involved in a high risk pursuit both in terms of debilitating economic swings and the vagaries of natural phenomenon. . . . ‘[H]ip pocket’ financing has largely been replaced with farming operations which are highly capitalized and which operate on borrowed funds. . . . Relying to such a large extent on borrowed funds accentuates the financial damage which occurs when drought, flood, insects, disease, or other natural disaster strikes a farmer’s crop. In a matter of days or even hours a natural disaster can wreak financial ruin on an individual farmer or perhaps an entire rural community. . . . The seriousness of the need of providing financial protection to farmers should not be underestimated. Congress has recognized this necessity and adopted programs to address it.

Id.

29. 7 U.S.C.A. § 1502(a) (West 2014).

30. Rendahl, *supra* note 25, at 193-94 n.62.

31. *Id.*

32. 7 U.S.C.A. § 1508(a)(1) (West 2018); An Act to Improve and Expand the Federal Crop Insurance Program, Pub. L. No. 96-365, 94 Stat. 1312 (1980).

33. *The Basics of Crop Insurance*, *supra* note 26. Low demand can be attributed to a variety of possible factors: “[1] Insurance can become unattractive when expected losses and required premiums become high in relation to property values. The preferred strategies are risk avoidance and loss mitigation. [2] There is less willingness to insure, because there is

Despite increased availability of crop insurance, enrollment remained low and government costs increased, prompting Congress to further amend Federal Crop Insurance to increase participation. Costs were prohibitive for most farmers and payouts did not adequately cover losses.³⁴

Then, major drought in the 1980s led to a succession of bills for ad hoc disaster assistance to farmers (1988, 1989, 1992, 1993).³⁵ These bills provided one-time financial relief to farmers suffering from disaster-related crop losses but provided no long-term solution.³⁶ However, “Congress grew tired of these repeated requests.”³⁷ This prompted the 1994 Reform Act, which required farmers to participate in Federal Crop Insurance to be eligible for certain types of disaster payments.³⁸ This mandatory participation requirement proved widely unpopular and was subsequently repealed in 1996.³⁹

2. 1996 federal crop insurance reform

Through the 1996 Federal Crop Insurance Reform Act, Congress attempted to provide support to farmers in disasters while continuing to strive for efficient risk management. The Act created the “Risk Management Agency” (formerly the FCIC) to administer disaster funds to farmers through the Federal Crop Insurance (FCI) program as well as the newly created Non-insured Crop Disaster Assistance Program (NAP).⁴⁰ With different eligibility requirements, the goal was for FCI and NAP to complement each other and provide disaster support to all farmers.⁴¹

less uncertainty, when losses are expected to be frequent but of modest size in relation to property values. . . . [(3)] Consumers may be reluctant to pay high premium loadings to insure potentially large but rare disaster losses. [(4)] Some parties may be naturally hedged against certain losses. Many farmers, for example, are partially hedged against crop losses from bad weather because lower yields reduce supply and therefore tend to raise prices.” Scott E. Harrington, *Rethinking Disaster Policy*, 23 REG. 40, 43 (2000).

34. Rendahl, *supra* note 25, at 187.

35. *History of the Crop Insurance Program*, U.S. DEP’T AGRIC. RISK MGMT. AGENCY, <https://legacy.rma.usda.gov/aboutrma/what/history.html> (last visited Nov. 15, 2018).

36. *Id.*

37. *The Basics of Crop Insurance*, *supra* note 26.

38. *Id.*

39. Federal Agriculture Improvement and Reform Act of 1996, Pub. L. No. 104-127 (1996).

40. *Id.*

41. See discussion *infra* Sections I.A.2.a-b.

Nevertheless, FCI coverage is limited to specific crops in qualifying areas; thus many small family farmers do not qualify.⁴² While NAP was intended to fill the gap, the financial support is insufficient to sustain a small farmer after disaster wipes out the crops or stock. Even with the two options, small family farms are still left without federal support after a disaster.

a. Risk Management Agency. The Risk Management Agency (RMA) was given statutory authority to contract and partner with private-sector insurance agencies and distribute FCI. As with the 1980s amendments, these contracts allow private providers to offer premiums subsidized by the government through reinsurance.⁴³ Under RMA, there was an increase in authority given to contract with the private sector, which allowed for increased cost-cutting measures and expanded availability.⁴⁴ The subsidized premiums did increase FCI enrollment,⁴⁵ but even with subsidized premiums, as of 2011 an overwhelming 78% of U.S. farms had no crop insurance coverage.⁴⁶

Minimal enrollment numbers mean that, rather than running as a typical insurance program where participants subsidize enrollment for each other, the government must continue to subsidize premiums to keep the program running. Currently, the federal government subsidizes the premiums at an average of 62%.⁴⁷ But most of this money is subsidizing the insurance premiums of large corporate farms because such farms represent the largest enrollers in FCI.⁴⁸

b. Non-insured Crop Disaster Assistance Program. Non-insured Crop Disaster Assistance is the other main source of funds distributed by

42. Federal Agriculture Improvement and Reform Act of 1996, Pub. L. No. 104-127, § 194-96 (1996).

43. *Id.*

44. 7 U.S.C.A. § 7333 (West 2018).

45. CONG. RESEARCH SERV., R45193, FEDERAL CROP INSURANCE: PROGRAM OVERVIEW FOR THE 115TH CONGRESS 5 (2018) [hereinafter FEDERAL CROP INSURANCE PROGRAM OVERVIEW 2018].

46. U.S. DEP'T OF AGRIC. RISK MGMT. AGENCY, THE RISK MANAGEMENT SAFETY NET: PORTFOLIO ANALYSIS—MARKET PENETRATION AND POTENTIAL 5 (2013) [hereinafter USDA MARKET PENETRATION ANALYSIS].

47. FEDERAL CROP INSURANCE PROGRAM OVERVIEW 2018, *supra* note 45, at 14.

48. ANTON BEKKERMAN ET AL., AM. ENTER. INST., WHERE THE MONEY GOES: THE DISTRIBUTION OF CROP INSURANCE AND OTHER FARM SUBSIDY PAYMENTS 4-10 (Jan. 2018), <http://www.aei.org/wp-content/uploads/2018/01/Where-the-Money-Goes.pdf>.

RMA for farmers in disasters, but it also fails to provide comprehensive coverage. NAP “was created to provide crop loss assistance to producers who are unable to obtain federal crop insurance for a particular crop.”⁴⁹ NAP offers only catastrophic insurance coverage.⁵⁰ To receive a payout, farmers must suffer a “yield or inventory value loss greater than [50%,]” and coverage is only offered at up to 65% of the approved yield.⁵¹ NAP is offered as a stopgap to fill the hole for crops that are ineligible for FCI. But its limited coverage does not provide much support for small family farms. If a small family farm suffers a loss greater than 50% yet can only receive a payment to cover 65% of its possible yield, this will likely be insufficient to sustain the farm’s livelihood. Approximately 70% of small family farms operate with a less than 10% profit margin.⁵² Thus, while NAP is a valiant effort to provide support, it remains insufficient.

3. *Current concerns*

Federal Crop Insurance reform efforts have consistently sought to increase participation but failed to account for the changing makeup of farmers. Farm size has doubled in the last thirty years as corporate farming has taken over.⁵³ Crop insurance coverage is only offered for large commodity crops and in certain counties, depending on the percentage of land used for agriculture within a county.⁵⁴ Under current RMA standards, large corporate farms

49. KAREN R. KRUB ET AL., *FARMERS’ GUIDE TO DISASTER ASSISTANCE 4-1* (6th ed. 2008).

50. *Id.*

51. U.S. DEP’T OF AGRIC., *NONINSURED CROP DISASTER ASSISTANCE PROGRAM APPLICATION FOR COVERAGE* (2018), https://www.fsa.usda.gov/Internet/FSA_File/cc0471_nap_bp_140813v01.pdf.

52. 2014 FAMILY FARM REPORT, *supra* note 19, at 39.

53. MACDONALD, *supra* note 22, at ii–iii (“Although most cropland was operated by farms with less than 600 crop acres in the early 1980s, today most cropland is on farms with at least 1,100 acres, and many farms are 5 and 10 times that size. . . . [L]arger farms utilize labor and capital more intensively, which provide them with the primary source of their financial advantage.”).

54. USDA MARKET PENETRATION ANALYSIS, *supra* note 46, at 8. These commodity crops include corn, cotton, rice, soybeans, wheat, livestock, and poultry. They are covered by the Federal Crop Insurance because they can be easily traded, stored for a long time, and grown in large quantities at low costs. This is partly why industrial farms produce these crops. See Melanie J. Wender, Comment, *Goodbye Family Farms and Hello Agribusiness: The*

almost always qualify because the acreage of their operations meets the county agricultural land-use requirements and over 80% of their income is earned from large commodity crops.⁵⁵ On the other hand, small family farms are more likely to grow niche products not covered by crop insurance.⁵⁶ Additionally, small farmers do not farm in isolated locations, as do corporate farms.⁵⁷ Because the farmers live where they work, they farm in areas that are more populated and less likely to be counties covered by crop insurance.⁵⁸ Therefore, a large portion of the uninsured farms are small family farms.⁵⁹ Ad hoc disaster assistance used to be an option for small farmers, but with the emergence of FCI and NAP this help has largely disappeared, leaving small farmers with no post-disaster recovery help.⁶⁰

As one of the government's costliest programs, FCI is constantly targeted for cuts and reform.⁶¹ The changing landscape of farming in America and the evolving understanding of disaster risk factors necessitate reform. However, current calls for reform have largely neglected one of the most important issues: whether, and how, current farm relief adequately protects small family farms in the aftermath of natural disasters. This is a critical problem the next

Story of How Agricultural Policy Is Destroying the Family Farm and the Environment, 22 VILL. ENVTL. L.J. 141, 143 (2011).

55. MARY BOHMAN, U.S. DEP'T OF AGRIC. ECON. RESEARCH SERV., APN-078, AG AND FOOD STATISTICS: CHARTING THE ESSENTIALS (Oct. 2017).

56. There are a variety of reasons for this. Environmentally, commodity crops drain the soil more than other fruits and vegetables, and small family farms reuse their same land over and over. Fruits and vegetables, while riskier, have larger profit margins. For a more thorough discussion see Jessica Fanzo, *From Big to Small: The Significance of Smallholder Farms in the Global Food System*, LANCET PLANETARY HEALTH, Apr. 2017, at e15; see also Wender, *supra* note 54, at 143.

57. See MACDONALD, *supra* note 22, at 8 ("[Consolidated corporate] crop fields are more likely to be large and contiguous to one another, rather than scattered among other land uses.").

58. See Wender, *supra* note 54, at 144. Corporate farms tend to operate in isolated areas that are exclusively farmland and thus qualify for coverage. *Id.* Small family farmers tend to own land closer to communities in order to access other amenities. *Id.*

59. See USDA MARKET PENETRATION ANALYSIS, *supra* note 46, at 15.

60. Joshua D. Woodard & Scott Marlow, *Crop Insurance, Credit, and Conservation* (Point of View Working Paper, commissioned by AGree, Apr. 2017), <http://www.foodandagpolicy.org/sites/default/files/Crop%20Insurance%20Credit%20and%20Conservation.pdf>.

61. FEDERAL CROP INSURANCE PROGRAM OVERVIEW 2018, *supra* note 45, at 21 ("Given the program's significant cost and share of USDA program outlays, it is a frequent target for budgetary savings.").

section demonstrates by highlighting the many ways that small family farms suffer disproportionately in disasters.

II. DISPARATE IMPACT OF DISASTERS ON SMALL FAMILY FARMS

Small family farms suffer disproportionately more losses in disasters. “[W]ealth and income are more unequally distributed among farmers than in society as a whole, and . . . poverty is common among farmers.”⁶² About 75% of farmers in poverty work small family farms.⁶³ This subset of farmers is more vulnerable to loss before disaster strikes. Further, other factors such as higher overhead costs, limited access to legal help, and lifestyle harms expose this population to other dangers in the event of disaster. The combination of these factors increases the likelihood that a small family farm will not recover when a natural disaster hits.

A. Financial Loss

Small family farms suffer devastating financial losses from disasters in ways that larger farms do not. Small farms are costlier to run.⁶⁴ “Larger crop farms perform better financially, on average, than smaller farms.”⁶⁵ The differences reflect lower costs per unit of production.⁶⁶ While the operating costs and revenue are about the same for large and small farms, “larger operations appear to be able to apply their labor and capital to more acres than smaller farms.”⁶⁷ Because larger operations spread their costs across more acres, the more acres a farm is, the more profitable it is.⁶⁸ For these reasons, small farms operate with a smaller profit margin, and a loss from a disaster can be much more devastating on small farms than large ones.

62. Stephen Carpenter, *Family Farm Advocacy and Rebellious Lawyering*, 24 CLINICAL L. REV. 79, 81 (2017).

63. 2014 FAMILY FARM REPORT, *supra* note 19, at iii-iv.

64. *Id.* at 35-41.

65. *Id.*

66. *Id.*

67. *Id.*

68. *Id.*

Current policies governing federal disaster aid favor larger farmers over small farms.⁶⁹ Federal subsidies for crop insurance premiums are not adjusted by size of purchaser.⁷⁰ Farmers receive 62% in subsidies for premiums, regardless of whether the farmer makes \$1,000,000,000 or \$100,000.⁷¹ Since small farms have smaller operating budgets, their insurance payments will comprise a larger portion of the budget. Further, crop insurance disaster payments are based on production and have no cap.⁷² “The more ‘base acres’ available to a farmer, the more payments are available.”⁷³ Most farm programs restrict payments to farmers with an adjusted gross income above \$900,000 over three years,⁷⁴ but no such limits exist for crop insurance.⁷⁵ Additionally, as with other types of insurance, farmers choose the amount of coverage their crops receive, which

69. Christopher R. Kelley, *Rethinking the Equities of Federal Farm Programs*, 14 N. ILL. U. L. REV. 659, 670 (2016).

70. U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-15-356, CROP INSURANCE: REDUCING SUBSIDIES FOR HIGHEST INCOME PARTICIPANTS COULD SAVE FEDERAL DOLLARS WITH MINIMAL EFFECT ON THE PROGRAM 2-3 (Mar. 18, 2015) (analyzing government reforms to make program more efficient).

71. *Id.*

72. See Gary Schnitkey et al., *Farm Sizes Impacted by a \$40,000 Crop Insurance Premium Support Limit*, FARMDOC DAILY (Dep't of Agric. & Consumer Econ., Univ. of Ill. at Urbana-Champaign) 1 (Feb. 6, 2018), <https://farmdocdaily.illinois.edu/wp-content/uploads/2018/02/fdd060218.pdf> (discussing proposals for payment caps).

73. Kelley, *supra* note 69, at 670.

74. Ron Durst & Robert Williams, *Farm Bill Income Cap for Program Payment Eligibility Affects Few Farms*, U.S. DEP'T AGRIC. ECON. RES. SERV. (Aug. 1, 2016), <https://www.ers.usda.gov/amber-waves/2016/august/farm-bill-income-cap-for-program-payment-eligibility-affects-few-farms/>.

75. U.S. GOV'T ACCOUNTABILITY OFFICE, *supra* note 70, at 2-3.

then determines the insurance payment.⁷⁶ This means if small farmers want good coverage they must pay higher subsidies, which represents a significantly larger percentage of their operating budget. For these reasons, most small farmers forgo crop insurance.⁷⁷

Forgoing insurance leaves small farms susceptible to huge financial loss. The lack of adjusted rates for crop insurance means the cost is more prohibitive for small farmers. Furthermore, crop insurance policies provide coverage almost exclusively on a per-crop basis,⁷⁸ “which suits industrial farms growing single crops on vast acreage.”⁷⁹ Since small farms tend to grow more of a variety of crops, crop insurance enrollment is challenging and complicated, sometimes requiring multiple policies.⁸⁰ “As a result, few small farms take out insurance plans, leaving them vulnerable to risks like extreme weather and hard-pressed to secure credit and loans.”⁸¹

Having no insurance means small farmers can suffer three types of financial losses after a disaster. The first two losses are the lack of income due to crop damage and the lack of an insurance

76. FEDERAL CROP INSURANCE PROGRAM OVERVIEW 2018, *supra* note 45, at 8–11.

Table 1. Revenue Protection (RP) Farmer-Paid Premiums for Illinois Counties in 2015 and 2016.¹

Coverage Level	DeKalb County (175 Bu. APH, 186 Bu. TA-APH)			Champaign County (174 Bu. APH, 184 Bu. TA-APH)			Saline County (135 Bu. APH, 142 Bu. TA-APH)		
	2015	2016P	Change	2015	2016P	Change	2015	2016P	Change
	\$/acre	\$/acre	%	\$/acre	\$/acre	%	\$/acre	\$/acre	%
50%	0.53	0.55	4%	0.44	0.54	23%	4.58	5.47	19%
55%	0.74	0.78	5%	0.67	0.80	19%	5.83	6.93	19%
60%	1.05	1.16	10%	0.98	1.14	16%	7.33	8.69	19%
65%	1.54	1.68	9%	1.45	1.67	15%	9.24	10.85	17%
70%	2.30	2.55	11%	2.15	2.45	14%	11.88	13.85	17%
75%	3.96	4.62	17%	3.72	4.18	12%	16.83	19.53	16%
80%	8.30	9.15	10%	7.93	8.68	9%	28.47	32.98	16%
85%	16.51	18.31	11%	15.97	17.23	8%	50.37	58.28	16%

Id.

77. 2014 FAMILY FARM REPORT, *supra* note 19, at 39. Sixty-nine percent of midsize family farms purchase crop insurance and 73% of large farms do. *Id.* at 33. In contrast, only about 17% of small family farms participate in Federal Crop Insurance. *Id.*

78. See 7 U.S.C.A. § 1508(a) (West 2018).

79. Dylan Walsh, *Big Risks for Uninsured Farmers*, N.Y. TIMES: GREEN (May 22, 2012, 1:38 PM), <https://green.blogs.nytimes.com/2012/05/22/big-risks-for-uninsured-farmers/>. See JONATHAN R. MCFADDEN & ROBERT A. HOPPE, EIB-184, U.S. DEP’T OF AGRIC. ECON. RESEARCH SERV., EVOLVING DISTRIBUTION OF PAYMENTS FROM COMMODITY, CONSERVATION, AND FEDERAL CROP INSURANCE PROGRAMS 29 (Nov. 2017).

80. See Walsh, *supra* note 79.

81. *Id.*; 2014 FAMILY FARM REPORT, *supra* note 19, at 39.

coverage payout. The final loss comes from other security interests used as payment in place of lost income. Unlike large corporate farms, small farmers have little in liquid assets and typically rely on lending institutions to provide capital in the spring for planting costs.⁸² Most lenders “either require or consider crop insurance of borrowers in making loan decisions.”⁸³ If a lender is willing to take a risk on a small farmer without crop insurance, the loan will require other types of collateral because interest rates are already “high enough to be limited by state usury laws.”⁸⁴ Hence, nonprice methods are the lender’s only viable alternatives to manage risk; these methods include security interest in crop, security interest in machinery, lien on real estate, and lien on life insurance.⁸⁵ When a natural disaster hits, small family farmers have no income from the crop or insurance *and* lose whatever collateral was used to finance the planting of the crop, such as their house, their life insurance, necessary machinery, etc.⁸⁶ Bankruptcy is common in these situations. This is why farmers have their own Chapter Twelve bankruptcy, separate from other sectors, that includes special protections to deal with the financial concerns they face.⁸⁷ All small farmers have their own story, or know people personally who have lost their house, life insurance, and more after a disaster hits.⁸⁸

The losses small farms suffer from natural disasters can mean both short- and long-term ruin. The disparity of income received per field, crop insurance inequalities, and financing difficulties are all contributing factors. Because these factors do not exist for large farms, when disaster hits, small farms are hurt to the point of collapse.

82. See Peter J. Barry et al., *Farmers’ Credit Risks and Liquidity Management*, 63 AM. J. AGRIC. ECON. 216, 220 (1981).

83. Woodard & Marlow, *supra* note 60, at 1.

84. Barry, *supra* note 82, at 222.

85. See *id.* at 220–21.

86. These harms also contribute to other societal harms discussed later. See generally *infra* Part II.C.

87. 11 U.S.C.A. § 1201–31 (West 2015).

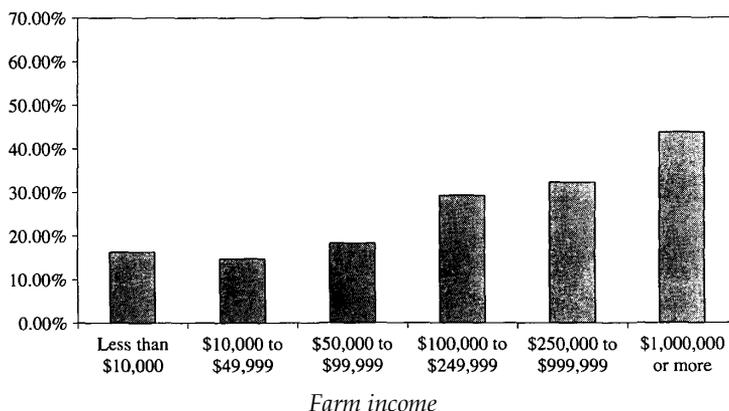
88. Telephone Interview with John Lloyd, Owner, SandHollow Enters. & NW Farm Supply (Mar. 4, 2018) (on file with author) (“When the hailstorm hit [in Hermiston, Oregon,] the farmer next to me lost his home and life insurance because they were his security on his fields. He was a better farmer than me, but nature took it all away.”).

B. Legal Help Access

Legal services post-disaster can help protect farmers from significant loss, yet small farmers are less likely to receive legal help. Post-disaster, small farmers face “foreclosure and dispossession that can involve the loss of their livelihoods, homes, and place in the community.”⁸⁹ A recent study shows that “[d]espite the important and complex nature of these legal issues [facing farmers] . . . few farmers sought out an attorney’s services.”⁹⁰ The most common reason farmers do not seek legal services is the cost.⁹¹ A more detailed analysis shows a “positive correlation between gross value of sales and the likelihood of hiring an attorney.”⁹²

Table⁹³

Percentage of farmers who have an attorney, compared to farm income



Farmers’ main financial resource after a natural disaster is the federal government, and yet small farmers are often unable to receive that assistance because accessing it requires legal skills. When asked about their legal concerns, farmers listed understanding

89. Carpenter, *supra* note 62, at 82.

90. A. Bryan Endres et al., *The Legal Needs of Farmers: An Analysis of the Family Farm Legal Needs Survey*, 71 MONT. L. REV. 135, 135 (2010).

91. *Id.* at 149.

92. *Id.*

93. *Id.*

federal support programs as the primary issue.⁹⁴ The federal help farmers receive post-disaster is dictated by laws that change from year to year.⁹⁵ Access to this federal aid “can play a significant role in the success or failure of a farm [post-disaster].”⁹⁶ This is a problem that disproportionately hurts small farmers because, while they would benefit substantially from access to a lawyer, they do not have the funds or opportunity to access legal help.⁹⁷

Small farmers often struggle to find legal help because of a shortage of available legal assistance in their communities. While about 20% of the U.S. population lives in rural communities, only about 2% of small law practices serve those communities.⁹⁸ Additionally, rural communities are marked by a “high density of acquaintanceship.”⁹⁹ The lack of anonymity for lawyers in rural communities means they may feel “beholden to local economic elites who provide most of their business.”¹⁰⁰ Industrial farms are the economic elite. Although owners of industrial farms usually do not live in the rural communities surrounding the farms, they often outsource services from the local communities.¹⁰¹ Consequently, even if small farmers decide to seek legal help, they may not find it.

Advocacy groups provide some legal aid to small family farms, but lack of legal help continues to hurt these farmers disproportionately. Lack of legal aid to small farms is gaining awareness. FLAG (Farmers’ Legal Action Group) “was born as a response to the farm credit crisis of the 1980s after tens of thousands of families lost their farms due to low commodity prices and overwhelming

94. *Id.* at 135.

95. Carpenter, *supra* note 62, at 96 (“Farmers are subject to immense variations in law.”).

96. *Id.* at 82.

97. Endres et al., *supra* note 90, at 150. (“[Eighty-three percent] of respondents who chose to hire an attorney to deal with their most significant problem reported satisfaction with the services received.”).

98. Lisa R. Pruitt & Bradley E. Showman, *Law Stretched Thin: Access to Justice in Rural America*, 59 S.D. L. REV. 466, 467 (2014).

99. William R. Freudenberg, *The Density of Acquaintanceship: An Overlooked Variable in Community Research?*, 92 AM. J. SOC. 27, 32 (1986); Pruitt & Showman, *supra* note 98, at 490 (“Small-firm practice in the country isn’t really all that different than small-firm practice in the city. The clients have many of the same problems and you handle a wide variety of matters. The difference is intimacy. In the country you know everybody and everybody knows you. That’s where things start to get different.” (quoting DONALD D. LANDON, COUNTRY LAWYERS: THE IMPACT OF CONTEXT ON PROFESSIONAL PRACTICE 56 (1990))).

100. Pruitt & Showman, *supra* note 98, at 490.

101. *Id.* at 490-91.

debt.”¹⁰² Attorneys at FLAG successfully challenged illegal procedures “used to freeze farmers’ income and force them off their land.”¹⁰³ FLAG, and other similar groups, focus on reaching small family farms that are underserved by the “private bar,” recognizing that the private bar “does agricultural law and represents prosperous farmers, agribusiness . . . and large cooperatives . . . [and] often takes an adversarial position to FLAG’s clients, rarely represent[ing] poor farmers . . .”¹⁰⁴ Nevertheless, FLAG acknowledges that potential clients’ legal needs overwhelm its capacity to represent individuals directly.¹⁰⁵ With the notable exception of FLAG and a few other similar projects, ongoing legal efforts to serve small family farmers have been rare—leaving small farmers without critical legal help.¹⁰⁶

C. Lifestyle Harm

The farming lifestyle inherently creates risks that increase with natural disasters and are felt more acutely by small family farms. Farmers, along with fishers and those involved in forestry, suffer from mental health issues more than any other occupation.¹⁰⁷ “According to the Centers for Disease Control and Prevention, farmers, as a group, have a higher suicide rate than any other occupation, even twice as high as vets.”¹⁰⁸ Farmers are at risk for a number of reasons: job-related isolation, stressful work environments, work-home imbalance, socioeconomic inequities, lower education levels, lack of access to health services, exposure to pesticides, potential for financial loss, barriers to mental health services, and access to lethal means.¹⁰⁹ Many of the risk factors

102. *About Us*, FARMERS’ LEGAL ACTION GRP., <http://www.flaginc.org/about/> (last visited Nov. 15, 2018).

103. *Id.*

104. Carpenter, *supra* note 62, at 94–95.

105. *Id.* at 94 n.51.

106. *Id.* at 94.

107. Wendy LiKamWa McIntosh et al., *Suicide Rates by Occupational Group – 17 States*, 2012, 65 CTRS. FOR DISEASE CONTROL & PREVENTION MORBIDITY & MORTALITY WKLY. REP., July 1, 2016, at 641, 641.

108. Tovia Smith, *As Milk Prices Decline, Worries About Dairy Farmer Suicides Rise*, NPR (Feb. 27, 2018, 11:31 AM), <https://www.npr.org/2018/02/27/586586267/as-milk-prices-decline-worries-about-dairy-farmer-suicides-rise>.

109. McIntosh et al., *supra* note 107, at 644.

increase for operators of small family farms. Add to that the helplessness that comes with a natural disaster and not having the safety net larger farms do, small family farms lose in a big way. Experts say small farmers face a “kind of perfect storm of financial pressure and a sense of powerlessness in an industry where prices are set by the government,” combined with social isolation and a self-reliant spirit that may make them loathe to seek help.¹¹⁰

The same risk factors that contribute to mental health problems in farmers also lead to increased risk of other societal harms. For example, intimate partner violence (IPV) rates are much higher in small rural and isolated communities.¹¹¹ Further, “[a]mong women who reported physical IPV, the frequency and severity increased with increasing rurality.”¹¹² Abuse rates are “strongly linked to economic stress” caused by housing issues, such as foreclosure concerns, a problem small family farmers often face.¹¹³ Rural Americans are a population that also suffers from “significant health disparities . . . when compared to the general population.”¹¹⁴ “Rural risk factors for health disparities include geographic isolation, lower socio-economic status, . . . and limited job opportunities.”¹¹⁵ The problem grows when the rural resident is poor and does not have employer-provided healthcare coverage.¹¹⁶ Finally,

110. Smith, *supra* note 108.

111. Corinne Peek-Asa et al., *Rural Disparity in Domestic Violence Prevalence and Access to Resources*, 20 J. WOMEN'S HEALTH 1743, 1745 (2011) (urban women 15.5%, large rural town 13.3%, small rural town 22%); Wendy Boka, Note, *Domestic Violence in Farming Communities: Overcoming the Unique Problems Posed by the Rural Setting*, 9 DRAKE J. AGRIC. L. 389, 413 (2004) (“Domestic violence is a prevalent problem among rural and farming communities across America The problems that contribute to domestic violence—power and control, physical dominance, social gender roles, economic dependence, isolation, and a lack of support resources—are present in rural society just as in urban society. However, additional barriers affect rural victims of domestic violence. These barriers include geographic isolation, economic structure, social and cultural pressures, and the lack of transportation, child care, housing, sufficient police availability and training, and a support system.”).

112. Peek-Asa et al., *supra* note 111.

113. Robert Cherry & Chun Wang, *The Link Between Male Employment and Child Maltreatment in the U.S., 2000–2012*, 66 CHILD. & YOUTH SERVS. REV. 117, 118 (2016).

114. *Rural Health Disparities*, RURAL HEALTH INFO. HUB, <https://www.ruralhealthinfo.org/topics/rural-health-disparities#regions> (last visited Nov. 15, 2018).

115. *Id.*

116. Jeffrey R. Wakefield, *New UVM Study: Health Insurance Costs Threaten Farm Viability*, UNIV. VT. (July 14, 2017), <https://www.uvm.edu/uvmnews/news/new-uvm-study-health-insurance-costs-threaten-farm-viability> (“According to a new U.S. Department of Agriculture-funded study, lack of access to affordable health insurance is one of the most significant

stress from the rural farming lifestyle, with its attendant financial risk and loss, can lead to considerable health issues and increased risk of death.¹¹⁷ While not direct causation, small family farms suffer from these issues in a way large corporate farms do not due to lower income levels, increased financial instability, and less structural support.

Juggling increased financial losses, limited legal help, and significant lifestyle harms, small family farms are in a desperate situation after a disaster.

III. EVALUATING RISK: SHOULD THE GOVERNMENT PROTECT SMALL FAMILY FARMS IN DISASTERS?

While many factors contribute to small farms struggling and going under in disasters, a thorough risk analysis leads one to conclude that these farms are worth saving. Current federal farm disaster aid does not ensure that small farms will continue to exist, perhaps in part because the public and policymakers have overlooked the value of these farms. This Part will demonstrate that family farms provide more economic value than is readily apparent. Furthermore, while financial factors are important, small farms are worth protecting from disaster loss because of the stability they bring to rural communities, their impact on socially vulnerable populations, and how they protect the environment and mitigate future disaster risk.

A. Are Small Family Farms Economically Viable?

Although it seems that small farms are becoming obsolete because they cannot financially keep up, a closer look shows that they may be more economically viable than large farms and worth protecting in disasters. Over the last fifty years the United States has undergone immense population growth and similar technological development. To keep up with population demand, agriculture

concerns facing American farmers, an overlooked risk factor that affects their ability to run a successful enterprise.”).

117. *Losing Your Nest Egg Can Kill You*, SCIENCE DAILY (Apr. 3, 2018), <https://www.sciencedaily.com/releases/2018/04/180403111113.htm> (“A sudden loss of net worth in middle or older age is associated with a significantly higher risk of death, reports a new North-western Medicine and University of Michigan study.”).

likewise developed new approaches to farming, and thus the “Green Revolution” was born.

The Green Revolution changed the landscape of American farming. Using newly developed hybrid crops, fertilizers, pesticides, and cultivation methods, the Green Revolution dramatically increased crop and animal yields.¹¹⁸

[B]etween 1950 and 2000, the average amount of milk produced per cow increased from 5,314 pounds to 18,201 pounds per year, the average yield of corn rose from 39 bushels to 153 bushels per acre, and each farmer in 2000 produced on average 12 times as much farm output per hour worked as a farmer did in 1950. The development of new technology was a primary factor in these improvements.¹¹⁹

“Overall, the Green Revolution was a major success because it allowed for an unprecedented level of national food security, leading to a human population boom”¹²⁰ And for decades government policies favored and encouraged this big farming approach. As Earl Butz, U.S. Secretary of Agriculture from 1971 to 1976, famously said, “get big or get out” and “adapt or die.”¹²¹ Farm consolidation was a natural by-product of these developments. “In 1935, there were 6.8 million farms in the United States with an average size of 155 acres. By 2002, there were only 2.1 million farms with an average size of 441 acres.”¹²² The total number of farms declined by 70%, but the amount of land in agricultural production stayed fairly constant as bigger farms purchased smaller farms that could not survive.

Current federal farm disaster policies continue to favor corporate farms over small farms under the assumption that this is the

118. Laurie Ristino & Gabriela Steier, *Losing Ground: A Clarion Call for Farm Bill Reform to Ensure a Food Secure Future*, 42 COLUM. J. ENVTL. L. 59, 84–85 (2016).

119. *Id.* (quoting KEITH O. FUGLIE ET AL., ECON. RESEARCH SERV., PRODUCTIVITY GROWTH IN U.S. AGRICULTURE 1 (2007)).

120. Shannon Avery Hughes, *Global Sustainable Farming and the “SoCo” Soil Conservation Project*, 45 DENV. J. INT’L L. & POL’Y 431, 433 (2017).

121. William S. Eubanks II, *A Rotten System: Subsidizing Environmental Degradation and Poor Public Health with Our Nation’s Tax Dollars*, 28 STAN. ENVTL. L.J. 213, 228 (2009).

122. *Id.* at 228–29 (citation omitted).

most fiscally responsible approach.¹²³ The federal Office of Management and Budget (OMB) operates under the policy that a regulation is not promulgated “unless the potential benefit to society outweighs the potential cost.”¹²⁴ Under OMB policy, corporate farms deserve federal protection because of the societal benefits from massive crop production. When natural disasters destroy small farms perhaps the overall economic benefit to society appears less than the minimal loss in production. Yet, when all the costs of corporate farming are accounted for, small family farms may actually be the most economical.

Researchers across many disciplines are raising the alarm at the unsustainable low food prices resulting from corporate farming practices.¹²⁵ Federal subsidies to corporate farms artificially lower food prices and hide the negative externalities.¹²⁶ There are many costs to corporate farming that are not priced into what consumers pay.

[E]very American pays for commodity crops five distinct times: (1) at the supermarket checkout, (2) with federal taxes that predominantly line the pockets of subsidized agribusiness, (3) with federal taxes for environmental cleanup costs paid by the government because of poor environmental protection standards in the Farm Bill, (4) through individualized medical costs linked to obesity, diabetes, asthma, malnutrition, hunger, and other illnesses caused by the Farm Bill, and (5) with additional federal taxes paid to collectively buttress healthcare programs such as Medicare, Medicaid, and emergency room care for patients of lower socioeconomic status who often fall ill as a result of the

123. See D. Lee Miller, *A Seat at the Table: New Voices Urge Farm Bill Reform*, 127 *YALE L.J.F.* 395, 400 (2017) (“Farm Bill policies support this consolidation through broad-based commodity programs and the federal crop insurance program.”).

124. Exec. Order No. 12,291, 46 *Fed. Reg.* 13,193 (Feb. 17, 1981).

125. See EMILE A. FRISON, *INT’L PANEL OF EXPERTS ON SUSTAINABLE FOOD SYS., FROM UNIFORMITY TO DIVERSITY: A PARADIGM SHIFT FROM INDUSTRIAL AGRICULTURE TO DIVERSIFIED AGROECOLOGICAL SYSTEMS* 18 (June 2016); SAVANNA HENDERSON ET AL., *FOOD TANK, THE REAL COST OF FOOD: EXAMINING THE SOCIAL, ENVIRONMENTAL, AND HEALTH IMPACTS OF PRODUCING FOOD* 6 (2015); York W. Bradshaw, *Urbanization and Underdevelopment: A Global Study of Modernization, Urban Bias, and Economic Dependency*, 52 *AM. SOC. REV.* 224, 236 (1987); Linda Breggin & D. Bruce Myers Jr., *Subsidies with Responsibilities: Placing Stewardship and Disclosure Conditions on Government Payments to Large-Scale Commodity Crop Operations*, 37 *HARV. ENVTL. L. REV.* 487, 490 (2013).

126. Tweeten, *supra* note 15, at 4.

Farm Bill-induced food system. It is only when the majority of American taxpayers and policymakers understand the true costs of industrial agriculture that the necessary changes can be made to fix the nation's rotten agricultural system.¹²⁷

A thorough discussion of the negative externalities, their actual cost, and how much corporate farming practices contribute, is beyond the scope of this Note.¹²⁸ Nevertheless, it is necessary to highlight a few and acknowledge that they are a very real problem. Some of the negative externalities attributed to corporate farms include water pollution, soil degradation, increased carbon emissions, large fossil fuel consumption and reliance, limited food choices,¹²⁹ increased obesity and higher medical costs,¹³⁰ increased pesticide use and consumption,¹³¹ income disparity and more poverty, limited economic opportunities,¹³² increased antibiotic use and consumption, harm to third world countries,¹³³ massive waste and odor issues,¹³⁴ loss of market competition, and creation of a monopoly market.¹³⁵ If corporate farms' costs included a small portion of the negative externalities they create, small family farms would likely be "at least as efficient as larger commercial operations[,]"¹³⁶ if not more efficient.¹³⁷ Small family farms impose

127. Eubanks, *supra* note 121, at 239–40 (citation omitted).

128. Nicole E. Negowetti, *Exposing the Invisible Costs of Commercial Agriculture: Shaping Policies with True Costs Accounting to Create a Sustainable Food Future*, 51 VAL. U. L. REV. 447 (2017).

129. See David Wallinga, *Today's Food System: How Healthy Is It?*, 4 J. HUNGER & ENVTL. NUTRITION 251, 258–60 (2009).

130. Scott Fields, *The Fat of the Land: Do Agricultural Subsidies Foster Poor Health?*, 112 ENVTL. HEALTH PERSP., at A820 (2004), <https://ehp.niehs.nih.gov/doi/pdf/10.1289/ehp.112-a820>.

131. See U.S. DEP'T OF AGRIC. ECON. RESEARCH SERV., EIB-98, AGRICULTURAL RESOURCES AND ENVIRONMENTAL INDICATORS, 2012 EDITION 21 (Craig Osteen et al. eds., 2012) (admitting farmers spent \$7.87 billion on millions of pounds of pesticides).

132. Alex E. Snyder, Note, *Saving the Family Farm Through Federal Tax Policy: Easier Said Than Done*, 62 WASH. & LEE L. REV. 729, 732 (2005).

133. Ristino & Steier, *supra* note 118, at 65.

134. John Verheul, *Methane as a Greenhouse Gas: Why the EPA Should Regulate Emissions from Animal Feeding Operations and Concentrated Animal Feeding Operations Under the Clean Air Act*, 51 NAT. RESOURCES J. 163, 168 (2011).

135. U.S. DEP'T OF AGRIC. NAT'L COMM'N ON SMALL FARMS, MP-1545, A TIME TO ACT 9 (1998) [hereinafter TIME TO ACT].

136. Willis L. Peterson, *Are Large Farms More Efficient?* 13 (Univ. of Minn. Dep't of Applied Econ., Staff Paper P97-2, 1997).

137. TIME TO ACT, *supra* note 135, at 13.

fewer of these externalities for a variety of reasons. For example, they practice crop rotation, which produces a wider variety of crops, thereby providing an array of healthy food choices for consumers and requiring fewer fertilizers because soil is less depleted.¹³⁸ A more thorough analysis of the noneconomic factors that show small family farms merit more federal support will be discussed later. But purely from an economic standpoint, the government should do more to protect small farms from disaster loss.

B. Value of the Small Family Farm to Rural Communities

Small family farms are essential to much-needed rural communities and merit greater disaster protection. Farming is an important part of America's heritage. The Founding Fathers encouraged a "national agrarian identity."¹³⁹ Thomas Jefferson famously stated, "Cultivators of the earth are the most valuable citizens . . . and they are tied to their country and wedded to it's [sic] liberty and interests by the most lasting bands."¹⁴⁰ Although America's landscape has changed, rural communities are still valuable to this country.

Rural communities represent a valuable population in our country that government programs seek to protect. Beginning in 1893, in response to urbanization, the government established projects to benefit rural communities and commissioned major reports on the needs of rural populations.¹⁴¹ These programs have expanded and evolved over the years but continue because of an acknowledged "value of rural communities as a basis for lifestyle concerns."¹⁴²

Small family farms contribute to the economic health of rural communities, which necessitates greater disaster protection. Small family farms result in decentralized land ownership, which provides more employment opportunities in rural communities, increasing the overall economic health of the community.¹⁴³ Lawmakers argue

138. Wender, *supra* note 54, at 163.

139. DENNIS KEENEY & LONI KEMP, THE INST. FOR AGRIC. & TRADE POL'Y & THE MINNESOTA PROJECT, A NEW AGRICULTURAL POLICY FOR THE UNITED STATES 6 (2003).

140. Letter from Thomas Jefferson, U.S. Minister to Fr., to John Jay, U.S. Sec'y of Foreign Aff. (Aug. 23, 1785), <https://founders.archives.gov/documents/Jefferson/01-08-02-0333>.

141. 5 WEST'S FEDERAL ADMINISTRATIVE PRACTICE pt. 12, ch. 62, § 5703 (July 2018 update) ("Background of Rural Development Policies").

142. *Id.* at § 5701.

143. TIME TO ACT, *supra* note 135, at 13.

that farm subsidies “will trickle down to local economies, spurring growth. But as farms consolidate and become more mechanized, there are fewer jobs, especially for unskilled laborers.”¹⁴⁴ Conversely, small farm owners rely on local businesses and services for their needs and “are more likely to have a stake in the well-being of the community and the well-being of its citizens.”¹⁴⁵ When small farms collapse after disasters, it causes a rural exodus,¹⁴⁶ and those left in the community “are trapped in a long, painful death spiral, plagued by poverty, crime and unemployment.”¹⁴⁷ Keeping small farmers in rural communities makes sense from an economic perspective but requires greater federal support.

The social, cultural, and environmental health of rural communities relies heavily on small farms, and the federal government should do more to support them. “Connection to the land has always been central to the spiritual and cultural values of our country’s indigenous people.”¹⁴⁸ Owners of small farms typically share their agricultural knowledge within the community, which promotes community vitality.¹⁴⁹ Additionally, owners of small farms practice more regenerative farming practices, with fewer pesticides, and choose “specialty crops” (fruits and vegetables) over commodity crops (wheat, corn, soybeans), which enhances the physical and environmental health of the community.¹⁵⁰

As small farms fold in disasters and the communities around them are subsequently lost, a rich cultural heritage and tradition is lost as well. Social scientists evaluated the results of fifty-one studies spanning eight decades, documenting what links, if any, the transition from small farms to industrialized farming has on

144. Gilbert M. Gaul & Dan Morgan, *A Slow Demise in the Delta*, WASH. POST (June 20, 2007), <http://www.washingtonpost.com/wp-dyn/content/article/2007/06/19/AR2007061902193.html>.

145. TIME TO ACT, *supra* note 135, at 21.

146. Eubanks, *supra* note 121, at 231.

147. Gaul & Morgan, *supra* note 144.

148. TIME TO ACT, *supra* note 135, at 21.

149. Tyler Slack, *Bridging the Gap: Farm Transition Challenges Facing Elder Farmers and the Need for a Nationwide Farm-On Program*, 20 ELDER L.J. 485, 514 (2013).

150. Ristino & Steier, *supra* note 118, at 89-90.

communities.¹⁵¹ The results showed “[a]dverse impacts were found across an array of indicators measuring socioeconomic conditions, community social fabric, and environmental conditions. Few positive effects of industrialized farming were found across studies. The results demonstrate that public concern about industrialized farms is warranted.”¹⁵² Altogether, these social, cultural, and environmental losses are hard to evaluate in a traditional financial cost-benefit analysis but illustrate that rural communities need small farms.

C. Loss of Small Family Farms and Impact on Vulnerable Populations

Small family farms deserve greater disaster protection because losses within this group will unduly hurt already vulnerable populations. Small farms are disproportionately more likely to be operated by minorities, women, and the elderly.¹⁵³ Furthermore, these farms operate with very small profit margins, if not at zero

151. Linda Lobao & Curtis W. Stofferahn, *The Community Effects of Industrialized Farming: Social Science Research and Challenges to Corporate Farming Laws*, 25 AGRIC. & HUM. VALUES 219, 219–20 (2008).

152. *Id.* at 219.

153. U.S. DEP’T OF AGRIC., ACH 12-3, 2012 CENSUS OF AGRICULTURE HIGHLIGHTS: FARM DEMOGRAPHICS 2 (2014) [hereinafter 2012 CENSUS FARM DEMOGRAPHICS].

Share of Farms by Sales Class for Minority Operators, 2012
(percent of group)

Annual Sales	All Farms	Hispanic	American Indian	Black	Asian
Less than \$10,000	56.6	68.4	78.1	78.9	43.4
\$10,000 to \$49,999	18.9	17.1	14.3	15.6	22.3
\$50,000 to \$99,999	6.1	4.5	2.9	2.4	7.5
\$100,000 or more	18.4	10.0	4.7	3.1	26.8
Total	100	100	100	100	100

Source: USDA NASS, 2012 Census of Agriculture.

The number of women-operated farms grew more rapidly than that of men-operated farms in each sales class, but the overall rate of return on equity is -2.7% for women compared to 1.4% for men. U.S. DEP’T OF AGRIC., ACH 12-12, 2012 CENSUS OF AGRICULTURE HIGHLIGHTS: WOMEN FARMERS 1 (2014) [hereinafter 2012 CENSUS WOMEN FARMERS].

sales.¹⁵⁴ Without greater disaster protection, these farms will continue to suffer from systemically high exit numbers.¹⁵⁵

Women and minority farmers struggle to remain viable because of historical and current system inequalities. For decades, USDA policies excluded women and minority farmers and promulgated discriminatory practices against them.¹⁵⁶ Additionally, current regulatory structure and policies continue to constrain these farmers' abilities to make a living.¹⁵⁷ USDA loans operate based on local committee decisions.¹⁵⁸ Women and minorities are often shut out from accessing loans because the committees are comprised of a majority of white males.¹⁵⁹ Furthermore, women and minority farmers typically have no opportunity to benefit from FCI subsidies because the subsidies cover mostly "commodity" crops (wheat, corn, and soybeans) while women and minority farmers tend to farm alternative food products.¹⁶⁰ Similarly situated white men suffer less in disasters than minorities and women¹⁶¹ because of

154. Nathan A. Rosenberg, *Farmers Who Don't Farm: The Curious Rise of the Zero-Sales Farmer*, J. AGRIC. FOOD SYS. & COMMUNITY DEV., Fall 2017, at 149, 152 ("In 2012, zero-sales operators were disproportionately likely to be minority and women.").

155. *Id.*

156. Cassandra Jones Havard, *African-American Farmers and Fair Lending: Racializing Rural Economic Space*, 12 STAN. L. & POL'Y REV. 333, 334 (2001) (detailing USDA discrimination in farm policy); Guadalupe T. Luna, "Women in Blue Jeans:" *Connecting the Past with Agricultural Transformations in the Present*, 23 WIS. J.L. GENDER & SOC'Y 313 (2008) (discussing the history of gender discrimination in farming); see *Pigford v. Glickman*, 185 F.R.D. 82 (D.D.C. 1999), *aff'd*, 206 F.3d 1212 (D.C. Cir. 2000), and *enforcement denied sub nom.*, *Pigford v. Schafer*, 536 F. Supp. 2d 1 (D.D.C. 2008) (holding racial discrimination by the USDA violated Equal Credit Opportunity Act and settlements authorized).

157. See Michèle Alexandre, *We Reap What We Sow: Using Post-disaster Development Paradigms to Reverse Structural Determinist Frameworks and Empower Small Farmers in Mississippi and Haiti*, 14 U. PA. J.L. & SOC. CHANGE 135, 137 (2011).

158. Havard, *supra* note 156, at 334-35.

159. Gaul & Morgan, *supra* note 144 ("Nationally, there are 7,882 committee members, but just 90 of them are black. In Mississippi there are 236 committee members, only eight of whom are black."). See generally Luna, *supra* note 156.

160. Eliza Barclay, *Old McDonald Might Be a Lady: More Women Take Up Farming*, NPR (June 13, 2013, 11:51 AM), <https://www.npr.org/sections/thesalt/2013/06/12/190982358/old-mcdonald-might-be-a-lady-more-women-take-up-farming> (explaining that 72% of women's agricultural sales were from specialty livestock and crops).

161. Cf. 2012 CENSUS WOMEN FARMERS, *supra* note 153, at 2. Women farmers usually rely on other sources of income to help cover costs. *Id.* Minority groups usually live in meager circumstances. 2012 CENSUS FARM DEMOGRAPHICS, *supra* note 153, at 3.

greater systemic support.¹⁶² For these reasons, these minority farmers are placed in a vulnerable position with no protection when disaster strikes.

Another vulnerable population, elderly farmers, also suffers disproportionately under current federal aid disaster policies. Currently, U.S. agriculture faces a troublesome age gap.¹⁶³ In 2005, 25% of all farmers (corporate and small farmers) were sixty-five or older, compared to only 3% of the overall labor force.¹⁶⁴ Experts wonder who will provide crops as the older generation exits farming and no younger farmers replace them.¹⁶⁵ Factors contributing to the age gap include lack of replenishment from a younger work force, inadequate savings for elderly farmers, no real buying market for elderly farmers' real property, no employer-sponsored savings, lack of family successors, and less social security income.¹⁶⁶ These factors are more relevant to small family farmers than large corporate farms. Increased disaster support would incentivize younger farmers to enter the field, thus increasing the buying market and providing successors so the elderly farmers can retire.

When elderly farmers exit the market after disasters, society suffers as well. The societal costs of elderly farmers leaving farming after disasters are three-fold: first, the loss from their farm output; second, the loss of knowledge and information to pass along to successors; and third, a lack of other farmers to fill the void. Limited federal support has a trickledown effect; fewer younger people enter the farming industry because the risks are too great.¹⁶⁷ Thus, protecting this vulnerable population from disaster loss would provide many benefits.

Vulnerable small farming populations deserve protection because they suffer greater loss, which in turn puts more of a burden

162. See Alexandre, *supra* note 157, at 140. For example, in the Mississippi Delta between 1920 and 1992, the number of black farmers decreased by 98% and the number of similarly situated white farmers only decreased by 65%. *Id.* at 142.

163. TIME TO ACT, *supra* note 135, at 89.

164. Slack, *supra* note 149, at 486 (citing Ashok K. Mishra et al., *How Do U.S. Farmers Plan for Retirement?*, 3 AMBER WAVES 13, 13-18 (2005)). Elder farmers make up over half of farms in poverty. 2014 FAMILY FARM REPORT, *supra* note 19, at 48.

165. Slack, *supra* note 149, at 490; TIME TO ACT, *supra* note 135, at 89.

166. Slack, *supra* note 149, at 490-99.

167. See Karin R. Zeigler, Note, *Who Will Teach Our Farmers: Learning the Value of Mentor Programs from State and Private Programs*, 5 DRAKE J. AGRIC. L. 279, 280 (2000).

on society. These groups tend to be at or below poverty levels and have less education.¹⁶⁸ The USDA has attempted to reach out to these groups through the USDA Minority Farm Register; tax changes; the Women, Food and Agriculture Network; and changes in census-data gathering to recognize and track these groups.¹⁶⁹ But additional work still needs to be done. As Charles Fluharty, director of the Rural Policy Research Institute said, “The policy choice that Congress has made is so stark . . . You see the effects [of disasters on farmers] in lots of poor rural communities. But the tragedy is exacerbated in the minority communities.”¹⁷⁰ With little education and federal support, these groups often lose their self-reliance and instead rely on society to support them after a disaster. A federal support network established prior to disasters would limit the need for even more substantial support after.

*D. The Environmentally Responsible Choice:
Small Farms or Corporate Farms?*

Small farms merit more disaster protection because, regardless of the approach of analyzing risk in an environmental context, it is evident small farms cause less harm. All farming inevitably affects the environment and future generations. But small farms practice environmentally sustainable farming techniques, create a smaller carbon footprint, and minimize environmental harms that contribute to future disasters. A pure “risk versus risk” comparison creates a clear picture of the harms of industrialized farming and a valid argument for greater protection of small farms in disasters.

168. 2014 FAMILY FARM REPORT, *supra* note 19, at 23, 45–47; see also *Socially Disadvantaged Farmers: Race, Hispanic Origin, and Gender*, U.S. DEP’T AGRIC. ECON. RESEARCH SERV. <https://www.ers.usda.gov/topics/farm-economy/beginning-disadvantaged-farmers/socially-disadvantaged-farmers-race-hispanic-origin-and-gender/> (last visited Nov. 15, 2018).

169. See Luna, *supra* note 156, at 335 (“Until recently, the census limited population studies to male spouses as the principal operator.”); see also *Minority and Socially Disadvantaged Farmers Assistance*, U.S. DEP’T AGRIC. FARM SERV. AGENCY, <https://www.fsa.usda.gov/about-fsa/structure-and-organization/office-of-the-administrator/office-of-civil-rights/minority-and-socially-disadvantaged-farmers-assistance/index> (last visited Oct. 16, 2018).

170. Gaul & Morgan, *supra* note 144.

1. *Environmental damage of small and large farms*

Small family farms should receive more federal disaster protection because they create less environmental risk. The current crop insurance subsidy program offers coverage to farms for either “growing commodity crops on their land or . . . shifting cropland into conservation programs. . . .”¹⁷¹ Both options induce perverse incentives. Since insurance payouts are determined by production, and not just from weather-related loss but also revenue loss, farms are incentivized to mass produce (sometimes with double planting) without regard to quality or sustainability.¹⁷² These farms tend to rely on Green Revolution hybrid crops,¹⁷³ which supply higher yields but only when saturated with water, chemical fertilizers, and toxic pesticides.¹⁷⁴ Thus, industrial farmers pump the soil and crops with water and chemicals (or antibiotics if livestock farms)¹⁷⁵ to increase output and subsidy payments. Further, livestock farms cram as many bodies as they can in limited space to increase output, causing more environmental damage. The “conservation” option to receive subsidies, which in theory appears to protect the environment, requires nothing more than leaving a field fallow for a season to receive payments.¹⁷⁶ Neither option adequately protects the environment.

Small farmers typically practice more environmentally friendly techniques without receiving federal subsidies. Because small farmers tend to live on or near the land they farm, it is important to them to cultivate their lands using sustainable practices since “they

171. Eubanks, *supra* note 121, at 247.

172. See Wender, *supra* note 54, at 159–64.

173. U.S. DEP’T OF AGRIC., ACH 12-26, 2012 CENSUS OF AGRICULTURE HIGHLIGHTS: FAMILY FARMS 4 (2015) [hereinafter 2012 CENSUS FAMILY FARMS] (“Fifty-eight percent of midsize family farms and 55 percent of large family farms specialized in oilseed and grain production in 2012.”).

174. See Miller, *supra* note 123, at 400.

175. Kaitlyn Trout, Note, *You Can’t Have Your Beef and Eat It Too: The Statutory Effect of Anti-corporate Farming Acts on Family Farms and Beef Corporations*, 39 OKLA. CITY U. L. REV. 513, 531 (“Because feedlots receive cattle from a variety of sources that travel long distance on various freights, feedlots must over-vaccinate in hopes of maintaining the cattle’s health.” (footnote omitted)).

176. FEDERAL CROP INSURANCE PROGRAM OVERVIEW 2018, *supra* note 45, at 12. This document highlights conservation measures recently enacted to increase environmental protections.

are continuously exposed to environmental hazards present.”¹⁷⁷ They usually farm non-commodity crops,¹⁷⁸ because those crops do not deplete the soil as much, and rotate crops from year to year to protect soil nutrients and limit erosion; the crop rotation also decreases the huge demand for fertilizers. “Farming is a way of life for them rather than just a way of making money, so small family farmers are motivated to raise their crops and animals in the most environmentally sound and healthy way.”¹⁷⁹ Generally, non-commodity crops and sustainable practices do not qualify for federal subsidies under crop insurance.¹⁸⁰

“The federal crop insurance program is not a safety net, but a thinly veiled federal subsidy rewarding destructive behavior.”¹⁸¹ All farming can hurt the environment through air pollution, soil erosion, excessive water usage, and chemical pollution. In high-income countries, “agricultural pollution has already overtaken contamination from settlements and industries as the major factor in the degradation of [water].”¹⁸² Similar statistics exist for air pollution and soil damage.¹⁸³ But these risks dramatically increase with large corporate farms. Crop insurance provides perverse incentives by uncoupling food costs from the negative environmental externalities large-scale food production creates. As the Food and Agriculture Organization of the United Nations so succinctly said, “policies need to be coherent. Interventions aimed at increasing food production and farm income on one hand and at mitigating pollution . . . should be mutually supportive—or at least not conflicting . . .”¹⁸⁴ Large corporate farms would prefer to avoid the costs and pass them on to society “in the form of water and soil

177. Wender, *supra* note 54, at 143 (“These farmers and their families breathe in chemicals, smell the waste, and drink the polluted water.”).

178. 2012 CENSUS FAMILY FARMS, *supra* note 173, at 3. Of small farms, only 14% had oilseed and grain production as their top commodity. *Id.*

179. Wender, *supra* note 54, at 143.

180. While increased attention has been given to legislating incentives for more sustainable farming practices, these have yet to cover much ground. For a more detailed analysis, see William S. Eubanks II, *The Future of Federal Farm Policy: Steps for Achieving a More Sustainable Food System*, 37 VT. L. REV. 957 (2013).

181. Ristino & Steier, *supra* note 118, at 107.

182. JAVIER MATEO-SAGASTA ET AL., FOOD & AGRIC. ORG. OF THE U.N., WATER POLLUTION FROM AGRICULTURE: A GLOBAL REVIEW 2 (2017).

183. *Id.* at 19–20.

184. *Id.* at 22.

pollution.”¹⁸⁵ Recognizing that corporate farms create a larger environment risk, disaster legislation should reflect that by protecting farming practices that are sustainable.

2. *Effects on climate change: small vs. corporate*

Compared to industrial farms, small farms substantially limit the carbon footprint created by farming. Climate change is increasingly becoming the largest environmental issue,¹⁸⁶ with potential consequences that include future warming, increased frequency of heat waves, increased heavy precipitation in some areas, increased droughts, more intense tropical storms, and increased incidence of high sea level.¹⁸⁷ Moreover, climate change is increasingly linked to industrialized farming for two reasons: methane emissions and fossil fuel use.¹⁸⁸

Methane gas emissions naturally occur from all livestock farms, but the risk is enhanced on corporate farms. Methane gas is “many times more potent than CO₂” and “is responsible for nearly as much climate change as all other non-CO₂ gases put together.”¹⁸⁹ Methane emissions result from cattle waste, but emissions are growing disproportionately fast because of commercial farms’ Concentrated Animal Feeding Operations (CAFO).¹⁹⁰ CAFO house large numbers

185. TIME TO ACT, *supra* note 135, at 15.

186. Mary Jane Angelo, *Corn, Carbon, and Conservation: Rethinking U.S. Agricultural Policy in a Changing Global Environment*, 17 GEO. MASON L. REV. 593, 599–600 (2010) (“[G]lobal climatic changes will occur that will make all other environmental crises pale in comparison.”).

187. INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2014: SYNTHESIS REPORT 53 (2015), https://archive.ipcc.ch/pdf/assessment-report/ar5/syr/SYR_AR5_FINAL_full_wcover.pdf. According to the Intergovernmental Panel on Climate Change report, it is “[v]irtually certain” (>99% probability of occurrence) that future warming will occur, “extremely likely” (>90% probability) that heat waves and heavy precipitation will become more frequent, and “likely” (>66% probability) that there will be an increase in droughts and more intense tropical storms. *Id.* at 10, 51, 72.

188. *Id.* at 4–5; Verheul, *supra* note 134, at 168.

189. Verheul, *supra* note 134, at 164 (citing *Sources of Greenhouse Gas Emissions*, U.S. ENVTL. PROTECTION AGENCY, <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions> (last visited Nov. 15, 2018)).

190. Verheul, *supra* note 134, at 168–69; see also *Overview of Greenhouse Gases: Methane Emissions*, U.S. ENVTL. PROTECTION AGENCY, <https://www.epa.gov/ghgemissions/overview-greenhouse-gases> (last visited Nov. 15, 2018) (“Methane emissions in the United States decreased by 16 percent between 1990 and 2016. During this time period, emissions increased from sources associated with agricultural activities, while emissions decreased

of cattle in small spaces.¹⁹¹ Because cattle in CAFO are fed corn rather than grass, their waste cannot be used as a natural fertilizer.¹⁹² Thus, their waste has no use and is stored in a holding area or “waste lagoon.”¹⁹³ The waste sits and ferments in these lagoons for extended periods of time causing large increases of methane emissions: “Since 1990, the methane emitted from lagoons has increased nearly 31 percent.”¹⁹⁴ In contrast, small family farms are more self-sustaining. They typically feed their cattle grass and use the waste as a fertilizer for other fields, limiting methane emissions.¹⁹⁵

Farming’s dependence on fossil fuels continues to increase due to government policies that support a shift from human energy to fossil fuel energy. The United States’ current industrial farming policies, incentivizing output over quality, “are almost entirely fossil fuel dependent.”¹⁹⁶ As the food policy expert Michael Pollan famously stated, “when we eat from the industrial-food system, we are eating oil.”¹⁹⁷

A snapshot view of industrial agriculture . . . easily supports that view: (1) nitrogen fertilizers, “the backbone of high-yield industrial agriculture,” are synthesized from natural gas and consume approximately 30% of the energy used in U.S. agriculture; (2) gasoline or diesel powered tractors till the land and spread seeds; (3) electricity is constantly used to power irrigation pumps and laser-guided farm equipment; (4) gasoline or diesel powered combines collect the crops during harvest; (5) the crops are driven, usually by diesel powered trucks, to a feedlot or processing plant across the country; (6) the processing plant uses large amounts of electricity to turn the crops into a television dinner or snack food;

from sources associated with landfills, coal mining, and the exploration through distribution of natural gas and petroleum products.”).

191. 40 C.F.R. § 122.23 (2018). For the purposes of this paper, when I reference CAFOs I use the EPA’s definition as used in the cited regulation.

192. Verheul, *supra* note 134, at 168.

193. *Id.*

194. *Id.* at 169 (citing U.S. ENERGY INFO. ADMIN., DOCUMENTATION FOR EMISSIONS OF GREENHOUSE GASES IN THE UNITED STATES 2008, at 1, 31 (2008), [https://www.eia.gov/environment/archive/1605/ggrpt/documentation/pdf/0638\(2008\).pdf](https://www.eia.gov/environment/archive/1605/ggrpt/documentation/pdf/0638(2008).pdf)).

195. Verheul, *supra* note 134, at 168.

196. Wender, *supra* note 54, at 158.

197. Michael Pollan, *Farmer in Chief*, N.Y. TIMES MAG. (Oct. 9, 2008), https://www.nytimes.com/2008/10/12/magazine/12policy.html?_r=1&%20pagewanted=1.

and (7) diesel powered trucks drive the food items to their final destinations.¹⁹⁸

Consequently, industrial agriculture accounts for about 20% of U.S. fossil fuel consumption but only 6% of national gross domestic product.¹⁹⁹ Small family farms do contribute to fossil fuel use in the same way as large corporate farms. Nevertheless, even when scaling for size, small farms use fewer fertilizers, less electricity for water needs, and less gas for transportation because their environmentally friendly farming practices require less.

Small family farms are the more responsible choice when looking at climate change contribution. Government subsidies incentivizing corporate farms and protecting them in disasters may actually be counterproductive because of the increased risk they pose to climate change. In contrast, increased federal disaster aid to small family farms would ensure more sustainable food production practices.

3. *Future disaster mitigation*

Small farms do more to mitigate future disaster risk, and legislation should strive to support these practices. Farming is dependent upon nature, yet farming is also a key contributor to environmental harm. Some of the sustainable farming practices small farms utilize limit future disaster risks. This is true from small disasters to the catastrophic. Two examples of disasters provide context for understanding why federal aid supporting small farms in disasters can mitigate future disaster risk.

Industrial farming contributes to and causes flooding disasters in a way that small farming techniques do not. In July 2017, the National Weather Service issued flood warnings for south-central, southeast, and east-central Wisconsin.²⁰⁰ Storm damage eventually

198. Eubanks, *supra* note 121, at 269.

199. *Id.*; *Agriculture and Its Related Industries Added over \$1 Trillion to U.S. GDP in 2016*, U.S. DEP'T AGRIC. ECON. RESEARCH SERV., <https://www.ers.usda.gov/data-products/chart-gallery/gallery/chart-detail/?chartId=88969> (last visited Nov. 15, 2018).

200. *Severe Thunderstorms and Flash Flooding of July 19–20, 2017*, NAT'L WEATHER SERV., <https://www.weather.gov/arx/jul1917> (last visited Nov. 15, 2018).

caused about \$8.3 million in infrastructure costs.²⁰¹ In an area already susceptible to flooding, industrial farming has increased the risk and harm from flooding. To support CAFO, between 1987 and 2007 approximately 84% of agricultural land in Wisconsin switched from alfalfa and other grasses to row crops like corn and soybeans.²⁰² Predominantly grown by Wisconsin industrial farms, these commodity crops “provide less groundcover in the winter months and increase runoff from fields in the spring months.”²⁰³ Even though the land remains in use as “green space,” the change in usage increases flooding occurrences and damage costs in this region. Future flood risk in the area led the USDA to create a flood-plain easement program that restricts certain plots of agricultural land from being used for commodity crops.²⁰⁴ Small farms naturally mitigate these disasters because they use groundcover and crop rotation, which increase absorption and limit massive runoff during heavy rains.

Industrial farming also contributes to catastrophic natural disasters from which recovery may not be possible. Dead zones are oxygen-depleted water areas that kill marine life and decrease fish reproduction in surrounding areas. In nature, dead zones occur infrequently and on a small scale. But fertilizer-contaminated runoff from industrial farms has made this a natural disaster experts fear could lead to widespread fish shortages and cause the whole fishing industry to suffer.²⁰⁵ In 2017, the largest U.S. dead zone in the Gulf of Mexico grew to match New Jersey in size, and studies conclusively linked the growth to industrial farm fertilizer

201. Katie Delong, *WI Emergency Management: Flooding Caused \$8.3M in Damage to Infrastructure in Kenosha, Racine, Walworth*, FOX 6 (July 23, 2017, 8:29 PM), <http://fox6now.com/2017/07/23/wi-emergency-management-flooding-caused-8-3m-in-damage-to-infrastructure-in-kenosha-racine-walworth/>.

202. CAROLYN KOUSKY ET AL., RES. FOR THE FUTURE, *THE ROLE OF LAND USE IN ADAPTATION TO INCREASED PRECIPITATION AND FLOODING: A CASE STUDY IN WISCONSIN'S LOWER FOX RIVER BASIN 10-11* (2011), [http://www.rff.org/files/sharepoint/WorkImages/Download/RFF-Rpt-Kousky%20etal%20GreatLakes%20\(2\).pdf](http://www.rff.org/files/sharepoint/WorkImages/Download/RFF-Rpt-Kousky%20etal%20GreatLakes%20(2).pdf).

203. *Id.* at 11.

204. *Id.* at 40.

205. Denise Breitburg et al., *Declining Oxygen in the Global Ocean and Coastal Waters*, 359 SCIENCE 1, 4-6 (Jan. 5, 2018) (finding that ocean dead zones have expanded 1000% worldwide since 1950).

runoff.²⁰⁶ Small farmers protect their soil through crop rotation and groundcover rather than depleting and rebuilding artificially through fertilizers. This means there is less erosion, water runoff, and fertilizer pollution.

Harm from disasters is better mitigated by small family farm practices than industrial farms. Even if the harm seems unlikely, disaster mitigation is about planning for the low-probability, high-consequence disasters that often do not merit attention. But these harms should merit attention due to potential severe consequences. Industrial farms engage in many activities that show potential for severe consequences. Current federal crop insurance subsidies condone these practices. By providing greater support to small farms, the government also mitigates against future disasters.

IV. POSSIBLE LEGISLATIVE FIXES

Incremental changes to current legislation can provide small farms more protection in disasters. Suggestions include caps on payouts, graduated subsidies and increased coverage for additional crops, and subsidies for sustainable farming techniques. Not only will these changes help small farms in disasters but also mitigate many previously mentioned risk factors.

A. Payment Caps

Payment caps on federal crop insurance payouts limit taxpayer costs, protect small farms from monopolies, help rural communities remain viable, and protect green space. Federal crop insurance determines payouts based on prior years' revenue and anticipated income from current planting. Under this system, industrial farms stand to receive large payouts. Further, crop insurance provides revenue protection payouts even when farms receive income if the income is below anticipated insured levels.²⁰⁷ This incentivizes industrial farms to insure to the maximum amount, taking

206. LUCIA VON REUSNER, MIGHTY EARTH, MYSTERY MEAT II: THE INDUSTRY BEHIND THE QUIET DESTRUCTION OF THE AMERICAN HEARTLAND 6 (2017), <http://www.mightyearth.org/wp-content/uploads/2017/08/Meat-Pollution-in-America.pdf>; *Gulf of Mexico 'Dead Zone' Is the Largest Ever Measured*, NAT'L OCEANIC & ATMOSPHERIC ADMIN. (Aug. 2, 2017), <https://www.noaa.gov/media-release/gulf-of-mexico-dead-zone-is-largest-ever-measured>.

207. 11 COUCH ON INSURANCE pt. VI, subpt. C, § 155:101 (3d ed., Dec. 2018 update) ("Crop Damage or Insufficiency," authored by Steven Plitt et al.).

advantage of the subsidized premiums and benefiting doubly at taxpayers' expense, thus externalizing costs. Limiting payouts leads corporate farms to formally assess risk and purchase crop insurance as needed rather than unnecessarily purchasing as an opportunity for double income.

Creating payment caps limits federal promulgation of large farms, allows that money to be allocated to other subsidies, and gives small farms room to exist in the market.²⁰⁸ Without payment caps, large payments are going to the farms that are already significantly better off. Indeed, under this system large farms can continue to expand and monopolize the market.²⁰⁹ Rather than contributing to a market monopoly, caps would somewhat equalize the system. While large farms will continue to have more income, payment caps protect from a windfall, allowing them to maintain status quo while limiting consolidation.

Less consolidation results in two major benefits. Small farms can remain to support rural communities, providing jobs, preserving a cultural connection to the land, and helping ensure small farming techniques endure within the community. Moreover, less consolidation provides better green space. Techniques used on small farms limit water and fertilizer runoff problems, thus protecting the environment and mitigating the risk of future disasters.²¹⁰

B. Graduated Subsidies and Increased Crop Coverage

Crop insurance with graduated subsidies based on the income and equity of the farm would provide a way to increase subsidies for small farmers and cover additional crops. The current flat subsidy of 62% is applied equally to million-dollar farming corporations and small farmers with \$10,000 a year in income. Proponents for the current system hold that it is "fair" for crop

208. BEKKERMAN ET AL., *supra* note 48, at 4-10; see Snyder, *supra* note 132, at 731-32.

209. Eubanks, *supra* note 121, at 233 ("[S]ince the wealthiest corporations receive double compensation by both securing the largest profits through sales and acquiring the largest governmental subsidies based on their yields, they are apt to monopolize the market and push smaller competitors to the wayside.").

210. See Benjamin Bryce & Robert Skousen, *Bloomin' Disaster: Externalities, Commons Tragedies, and the Algal Bloom Problem*, 21 U. DENV. WATER L. REV. 11, 21-22 (2017).

insurance to be “size neutral.”²¹¹ But many argue that the lack of adjustment in subsidies is a significant loophole that should be addressed.²¹²

If the government is in the business of insurance, it should attempt to be more economically viable by implementing financially responsible methods. Most private insurance programs adjust rates based on risk, income, equity, and other factors. Risk can continue to be evaluated by region, and possible payout amount, and then can be incorporated into the subsidy rate. Small farms, which incur a small payout and create small risks for insurance companies when compared with large corporate farms, would qualify for lower insurance rates. Equalizing insurance payments to reflect the possible risk is a better approach to protect small farms. By giving large farms smaller subsidies, smaller farms can benefit from larger subsidies, and the cost remains the same to taxpayers.

Limiting subsidies to industrial farms also allows federal crop insurance to provide subsidies for additional “specialty crops.” Currently, “[f]armers [receiving subsidies] are not completely free to plant what they want. In general, producers seeking subsidies for ‘covered commodities’ may not plant fruits or vegetables on base acres.”²¹³ Subsidies for specialty crops, such as fruits and vegetables, would allow greater access to crop insurance for small farmers. Moreover, this would provide more security to vulnerable groups who farm these crops in greater numbers. Industrial farms could also use these subsidies to diversify and rotate crops, thus improving soil quality. Finally, the public would benefit from

211. Barrett Kirwan, Professor, Univ. of Ill. at Urbana-Champaign, Address at the Agricultural and Applied Economics Association 2014 Annual Meeting: The Crowd-Out Effect of Crop Insurance on Farm Survival and Profitability (July 27, 2014).

212. Susan Du, *Small Farmers Say that Even with Crop Insurance, the 1% Just Gets Richer*, CITY PAGES (Mar. 12, 2018), <http://www.citypages.com/news/small-farmers-say-that-even-with-crop-insurance-the-1-just-gets-richer/476593873> (“Because there is no cap on the subsidies, the wealthiest one percent commandeer an outsized portion of public funds.”); Johnathan Hladik, *Crop Insurance Subsidies in Serious Need of Reform*, INSIDESOURCES (May 5, 2017), <https://www.insidesources.com/crop-insurance-subsidies-serious-need-reform>; *Path to the 2018 Farm Bill: Crop Insurance Modernization*, NAT’L SUSTAINABLE AGRIC. COAL. (Dec. 6, 2017), <http://sustainableagriculture.net/blog/path-to-2018-farm-bill-crop-insurance> (“Additionally, the program [Federal Crop Insurance] provides subsidy support without any per farm limit and with little transparency, which allows some of the largest and wealthiest farms to grow larger and wealthier at the expense of other farmers and the taxpayer.”).

213. Alexandre, *supra* note 157, at 152 (internal quotations omitted).

greater access to a variety of healthy foods and reduced health-care costs.²¹⁴

C. Subsidies for Sustainable Techniques

Providing greater subsidies for sustainable techniques rewards small farms for healthy farming methods, incentivizes industrial farms to implement better practices, and protects from environmental concerns. The only conservation technique currently linked to federal crop insurance subsidies is when farmers leave a field fallow.²¹⁵ While this practice does give the soil a chance to rest, it also increases erosion when not coupled with groundcover or other revitalizing techniques. Small farmers who “cultivate their lands using sustainable agricultural methods solely for the protection of the ecological cycle that is vital to producing a high quality, nutritional crop . . . typically receive no federal funding despite their sustainable practices because [federal] . . . conservation programs are targeted primarily towards megafarms.”²¹⁶ For conservation efforts to be successful, Congress should link insurance payment subsidies to farming practices.²¹⁷ This would force farmers to face the actual costs of negative farming techniques and reward sustainable techniques, many already embraced by small farmers.²¹⁸

V. CONCLUSION

Small farms are a vital part of the U.S. economy yet are unprotected in disasters and left to suffer disproportionately more loss. Greater federal protection through the Federal Crop Insurance

214. *Id.* at 156 (“[B]enefits, such as grants of subsidies to small farmers and the promotion of healthy crops, could also greatly benefit governments and individuals by helping to reduce the cost of health care.”).

215. See Breggin & Myers, *supra* note 125, at 487 (explaining current crop insurance conservation subsidies and offering more responsible, effective options).

216. Eubanks, *supra* note 121, at 247–48.

217. Ristino & Steier, *supra* note 118, at 105–06.

218. Many articles address this option in greater detail. For a more thorough discussion see Angelo, *supra* note 186; Christopher Frump, Note, *Up to Our Ears: Corn Overproduction, Its Environmental Toll, and Using the 2012 U.S. Farm Bill to Limit Corn Subsidies, Increase Environmental Protection Incentives, and Place Accountability on Crop Operations*, 8 FLA. A&MU. L. REV. 419, 420 (2013).

Program would allow small farms to remain viable entities and, in doing so, protect rural communities, vulnerable populations, and environmental health. This subset of farms represents the “cornerstone of our agricultural and rural economy”²¹⁹ and deserves a federal safety net for when disaster strikes.

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219. TIME TO ACT, *supra* note 135, at 6.

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