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SURVIVING CLIMATE CHANGE IN AMERICA: TOWARD A  
RURAL RESILIENCE FRAMEWORK

*Laurie Ristino\**

*This Article argues that rural America—a land mass encompassing the majority of the nation and the locus of much of our ecosystem services, including the provisioning of food and water—is critical to our nation’s survival and prosperity in the climate change era. Further, this Article posits a key role for rural Americans as stewards of those resources and producers of food and fiber. Given the environmentally and economically compromised state of rural America, this Article proposes using the concept of resilience as the foundation of a framework to guide social investments and policy efforts to better address our economic and environmental sustainability challenges. This Article describes how such a framework could be operationalized to improve social outcomes by applying the proposed Rural Resilience Framework to reformulate the Farm Bill, which directly impacts food security, rural development, and natural resource conservation.*

*“The first revolution is when you change your mind about how you look at things and see that there might be another way to look at it that you have not been shown.”<sup>1</sup>*

*—Gil Scott-Heron*

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1. Kelly Gerling, *Gil Scott-Heron on the Mental Origin of Political Revolution*, YOUTUBE, 00:18 (Feb. 25, 2017), <https://www.youtube.com/watch?v=Y8vYyuW4EYg> [<https://perma.cc/N7Y4-RQEA>].

## INTRODUCTION

We, as a nation, are grossly unprepared for the emergent harms of our climate change world.<sup>2</sup> Even under the best of circumstances, adapting to and mitigating against climate change will take tremendous collective action and innovation. Yet, instead of rising to this challenge, the Trump administration has zealously dismantled the environmental policy gains of prior administrations and abandoned our global leadership on addressing climate change.<sup>3</sup> Given this state of national affairs, a host of actors—state governments, corporations, non-governmental organizations, academia, and philanthropies—are providing essential leadership for climate change progress.<sup>4</sup> The absence of a national climate change strategy, however, squanders precious social and financial capital and time. Organizing frameworks can mitigate against the lack of strategic climate governance by guiding the actions of many actors to achieve common goals. Organizing frameworks may also serve to jump-start progressive policy action in order to make up for lost time.

This Article proposes that the concept of resilience could serve as a foundational framework to guide and channel climate policy action. The term resilience, now used across disciplines, emerged from ecology to describe the capacity of systems to rebound from a disturbance and re-establish equilibrium.<sup>5</sup> In our climate change reality, this is an important concept because the ability to withstand perturbations is vital in a world where extreme weather events and the accelerated transformation of natural systems are the status quo. Rural America has a key role to play in our national resilience because it is the locus of our nation's ecosystem

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2. See generally MYLES ALLEN ET AL., INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, SPECIAL REPORT: GLOBAL WARMING OF 1.5° C (2018), <https://www.ipcc.ch/sr15/> [<https://perma.cc/4XA4-9HUA>] [hereinafter IPCC] (finding that an increase in temperature to just 1.5 degrees Celsius—lower than the international target of 2 degrees Celsius—will cause serious impacts to human and natural systems). See the various chapters contained in the Special Report for a more detailed discussion.

3. See Mark Landler & Coral Davenport, *Dire Climate Warning Lands with a Thud on Trump's Desk*, N.Y. TIMES (Oct. 8, 2018), <https://www.nytimes.com/2018/10/08/us/politics/climate-change-united-nations-trump.html> [<https://perma.cc/NJ8R-TGC9>].

4. John R. Allen, *American Climate Leadership Without American Government*, BROOKINGS (Dec. 14, 2018), <https://www.brookings.edu/blog/planetpolicy/2018/12/14/american-climate-leadership-without-american-government/> [<https://perma.cc/92AU-7ZGF>].

5. See Fridolin Simon Brand & Kurt Jax, *Focusing the Meaning(s) of Resilience: Resilience as a Descriptive Concept and a Boundary Object*, 12 ECOLOGY & SOC'Y, no. 1, art. 23, 2007, <https://www.ecologyandsociety.org/vol12/iss1/art23/> [<https://perma.cc/PV2L-KECW>].

services, including food and fiber provisioning.<sup>6</sup> To show how the resilience framework might be used to develop the economic and environmental sustainability of rural America through policy, this Article suggests applying the resilience framework to the Farm Bill because of its rare policy reach over rural America and food security in general.<sup>7</sup>

### I. THE CONCEPT OF RESILIENCE

Resilience as a guide for policy interventions gained widespread use after the global 2008 economic downturn when the international community grappled with how to address the humanitarian crisis then engulfing the developing world.<sup>8</sup> The current ubiquity of its use is a testament to the pliability of the resilience concept across a range of social problems.<sup>9</sup> One lesson learned to date is that in order to effectively operationalize the concept of resilience, the term should be clearly defined and incorporated into a framework with implementation goals and metrics for measuring and improving policy outcomes.<sup>10</sup>

In defining the term, two considerations are important to highlight as part of developing an effective resilience framework. First, a potential shortcoming of a resilience model is the idea that a resilient community is one that bounces back from a disturbance. If a human community is struggling before a disturbance, returning to that state is not desirable—or equitable.<sup>11</sup> Similarly, ecological systems that have been depleted because

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6. Ecosystem services are those amenities nature provides that benefit humans, such as clean water, clean air, climate change mitigation, and food. See WALTER V. REID ET AL., MILLENNIUM ECOSYSTEM ASSESSMENT, ECOSYSTEMS AND HUMAN WELL-BEING: SYNTHESIS, at v (José Sarukhán et al., 2005), <http://www.millenniumassessment.org/documents/document.356.aspx.pdf> [<https://perma.cc/JBH9-YCR3>].

7. See generally Agriculture Improvement Act of 2018, Pub. L. No. 115-334, 132 Stat. 4490 (effective Jan. 1, 2019) (also known as the 2018 Farm Bill).

8. See generally Misha Hussain, *Resilience: Meaningless Jargon or Development Solution?*, GUARDIAN (Mar. 5, 2013, 11:02 AM), <https://www.theguardian.com/global-development-professionals-network/2013/mar/05/resilience-development-buzzwords> [<https://perma.cc/8Z3N-SF7H>].

9. See, e.g., Fran H. Norris et al., *Community Resilience as a Metaphor, Theory, Set of Capacities, and Strategy for Disaster Readiness*, 41 AM. J. COMMUNITY PSYCHOL. 127, 127 (2008), made available at [https://www.researchgate.net/publication/5691020\\_Community\\_Resilience\\_as\\_a\\_Metaphor\\_Theory\\_Set\\_of\\_Capacities\\_and\\_Strategy\\_for\\_Disaster\\_Readiness](https://www.researchgate.net/publication/5691020_Community_Resilience_as_a_Metaphor_Theory_Set_of_Capacities_and_Strategy_for_Disaster_Readiness) [<https://perma.cc/ZS5N-6NW7>] (discussing use of resilience theory in the context of disaster readiness).

10. See Hussain, *supra* note 8 (critiquing the use of the term resilience to guide social action).

11. Caroline Lauer, *Bounce Forward, Not Back: Leveraging Resilience to Promote Equity in Brownsville, Texas*, HARV. REAL ESTATE REV. (Nov. 27, 2018),

of resource extraction or misuse—which is arguably every ecosystem—are per se not resilient and are, therefore, not able to “return” to a desired state. Consequently, building a community’s *capacity* for ongoing resilience is fundamental to the definition as used in this framework.

Second, and relatedly, resilience in a changing climate requires constant evolution or adaptation. So, even where a community is functioning well at the outset, the notion that resilient systems bounce back to an idealized state is misplaced. Unlike a sudden or periodic disaster event, such as a one-hundred-year flood, climate change is a process of ongoing change.<sup>12</sup> In other words, extreme weather as well as broader climatic changes are the rule, not the exception. Accordingly, the rural resilience model proposed in this Article facilitates a continuing process of resilience activation, not an end state. In fact, to avoid confusion with the term adaptation (changing in response to or in anticipation of an external stressor),<sup>13</sup> this Article distinguishes the two terms as follows: resilience is the ability to recover from stressors, while adaptation is the process of evolution that, in part, characterizes resilient systems.<sup>14</sup>

Therefore, “resilience” as it is used in the Rural Resilience Framework attempts to address both of the above noted concerns by defining the concept as follows: the capacity of a system, community or

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<https://medium.com/harvard-real-estate-review/bounce-forward-not-back-leveraging-resilience-to-promote-equity-in-brownsville-texas-f02efe03e99d> [https://perma.cc/K2AG-6Y44] (discussing that “bouncing back” is a popular narrative in resilience planning, but is problematic when the pre-disaster state is an unjust, inequitable system). The author proposes that resilience planning aims at “bouncing forward” to a society that is “more resilient, equitable and just after a disaster strikes.” *Id.*

12. See Rebecca Lindsey & LuAnn Dahlman, *Climate Change: Global Temperature*, NOAA CLIMATE.GOV (Aug. 1, 2018), <https://www.climate.gov/news-features/understanding-climate/climate-change-global-temperature> [https://perma.cc/B2V9-2W5D] (explaining that climate change is change that occurs over time).

13. See generally Gabrielle Wong-Parodi et al., *Resilience vs. Adaptation: Framing and Action*, 10 CLIMATE RISK MGMT. 1 (2015), <https://www.sciencedirect.com/science/article/pii/S2212096315000273> [https://perma.cc/R9CM-UTND].

14. See Liette Vasseur & Mikes Jones, *Adaptation and Resilience in the Face of Climate Change: Protecting the Conditions of Emergence Through Good Governance*, 1–2 (2015), <https://sustainabledevelopment.un.org/content/documents/6579124-Vasseur-Adaptation%20and%20resilience%20in%20the%20face%20of%20climate%20change.pdf> [https://perma.cc/8WD8-BUWC] (discussing the meaning of each term and the utility of resilience in addressing “super wicked” problems like climate change).

society to absorb, accommodate to and recover from the effects of a hazard, while still retaining basic structure and function or “identity.”<sup>15</sup>

## II. RURAL AMERICA: LINCHPIN OF NATIONAL RESILIENCE

“Farmers are the largest group of ecosystem stewards on earth.”<sup>16</sup>

### A. *Land Use and Resources*

America is both largely rural and highly urbanized. This duality provides a singular opportunity to turn the so-called urban-rural divide into a positive: the foundation of our future sustainability. According to the U.S. Census Bureau, slightly over eighty percent of our population lives in urban areas,<sup>17</sup> which comprises only three percent of the United States’ land mass.<sup>18</sup> A stunning visual created by Bloomberg News,<sup>19</sup> shared widely on social media and the mainstream press, powerfully illustrates this point.

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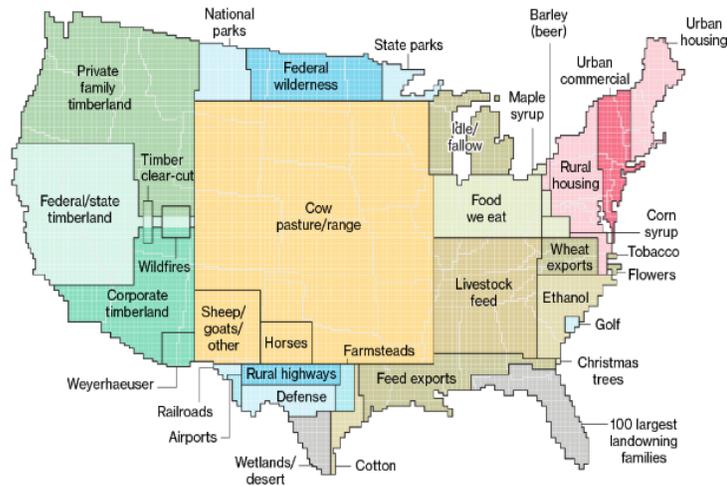
15. Daniel Lerch, *Six Foundations for Building Community Resilience*, POST CARBON INST. (Nov. 18, 2015), <http://www.postcarbon.org/wp-content/uploads/2015/11/Six-Foundations-for-Building-Community-Resilience.pdf> [<https://perma.cc/BN2K-EFTF>] (describing the importance of identity or retaining the essence of a community in a concept of resilience). In addition, the Rural Resilience Framework definition also incorporates elements of the definition of resilience employed by the United Nations—“the ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions.” U.N. Sys. Task Team on the Post-2015 U.N. Dev. Agenda, *Disaster Risk and Resilience*, at 3 n.1 (2012) (citing U.N. Int’l Strategy for Disaster Reduction, UNISDR Terminology on Disaster Risk Reduction (2009), [https://www.unisdr.org/files/7817\\_UNISDRTerminologyEnglish.pdf](https://www.unisdr.org/files/7817_UNISDRTerminologyEnglish.pdf)), [http://www.un.org/en/development/desa/policy/untaskteam\\_undf/thinkpieces/3\\_disaster\\_risk\\_resilience.pdf](http://www.un.org/en/development/desa/policy/untaskteam_undf/thinkpieces/3_disaster_risk_resilience.pdf) [<https://perma.cc/6WD2-6JF2>].

16. Megan Meacham et al., *Why Focus on Ecosystem Services in Rural Communities?*, CGIAR: THRIVE, <https://wle.cgiar.org/thrive/big-questions/why-focus-ecosystem-services-rural-communities/bundle-services-key-resilience> [<https://perma.cc/LN9R-LADW>].

17. *Measuring America: Our Changing Landscape*, U.S. CENSUS BUREAU (Dec. 8, 2016), <https://www.census.gov/library/visualizations/2016/comm/acs-rural-urban.html> [<https://perma.cc/A6RU-XZAH>].

18. *New Census Data Show Differences Between Urban and Rural Populations*, U.S. CENSUS BUREAU: NEWSROOM (Dec. 8, 2016), <https://www.census.gov/newsroom/press-releases/2016/cb16-210.html> [<https://perma.cc/TE5Z-SHMS>].

19. Dave Merrill & Lauren Leatherby, *Here’s How America Uses Its Land*, BLOOMBERG (July 31, 2018), <https://www.bloomberg.com/graphics/2018-us-land-use/> (providing a map of the United States divided proportionally by land use).



Despite the creep of urban areas, using the United States Department of Agriculture’s (USDA) data, Bloomberg concluded, “[g]athered together, cropland would take up more than a fifth of the [forty-eight] contiguous states. Pasture and rangeland would cover most of the Western U.S., and all of the country’s cities and towns would fit neatly in the Northeast.”<sup>20</sup> In other words, most of America remains in a relatively undeveloped state, in what the USDA often refers to as “working lands”—pasture, range, crop, and private forest land.<sup>21</sup> Not surprisingly, land use is regionally specific; for example, the Northeast is dominated by private forest lands; the Midwest is focused on commodity crop production; and the Southern Plains is home to expansive rangeland.<sup>22</sup> In addition to providing food and fiber, these working lands are also the locus of other

20. *Id.*

21. See DANIEL P. BIGELOW & ALLISON BORCHERS, ECON. RESEARCH SERV., MAJOR USES OF LAND IN THE UNITED STATES, 2012 (2017), [https://www.ers.usda.gov/webdocs/publications/84880/eib-178\\_summary.pdf?v=0](https://www.ers.usda.gov/webdocs/publications/84880/eib-178_summary.pdf?v=0) [<https://perma.cc/A2WA-TB7T>]; *Working Lands for Wildlife*, U.S. DEP’T AGRIC., <https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/technical/?cid=stelprdb1266401> [<https://perma.cc/975R-DQTN>].

22. Map of *Land Cover/Use, 2012*, by *Farm Production Region*, NAT. RES. CONSERVATION SERV. (Aug. 2015), [https://www.nrcs.usda.gov/Internet/NRCS\\_RCA/maps/m13654.png](https://www.nrcs.usda.gov/Internet/NRCS_RCA/maps/m13654.png) [<https://perma.cc/64ZT-AYYA>].

ecosystem services that, when functioning, provide us with clean air, clean water, climate mitigation, and biodiversity.<sup>23</sup>

The 2018 National Climate Assessment highlighted both the central role of rural residents as the stewards of the vast majority of these natural resources, and, relatedly, the fact that rural residents are impacted most immediately by climate change.<sup>24</sup> Thus, the United States' resilience in this climate change era is dependent on developing the mutually-reinforcing resilience of rural landscapes and the communities that both steward and make a livelihood from those lands.

To our collective detriment, neither these rural landscapes nor the human communities that largely rely upon them are, in general, resilient. For example, nutrient run-off from agriculture continues to be a major source of water pollution, resulting in unclean drinking water<sup>25</sup> and hypoxia in major bodies of water like the Gulf of Mexico and the Chesapeake Bay.<sup>26</sup> Hypoxia kills aquatic life and impacts the livelihoods relying on those ecosystems.<sup>27</sup> In a similar vein, despite federal policies to reduce soil erosion from agricultural production, erosion remains a serious problem, with 1.67 billion tons lost in 2012 alone.<sup>28</sup> Soil erosion results in several harms: water pollution; organic matter content loss; and,

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23. David Hales et al., *Rural Communities: Introduction*, NAT'L CLIMATE ASSESSMENT, <https://nca2014.globalchange.gov/report/sectors/rural-communities> [https://perma.cc/UE3S-96WQ].

24. See U.S. GLOB. CHANGE RESEARCH PROGRAM, 2 FOURTH NATIONAL CLIMATE ASSESSMENT: IMPACTS, RISKS, AND ADAPTATION IN THE UNITED STATES 393 (2018), [https://nca2018.globalchange.gov/downloads/NCA4\\_2018\\_FullReport.pdf](https://nca2018.globalchange.gov/downloads/NCA4_2018_FullReport.pdf) [hereinafter FOURTH NATIONAL CLIMATE ASSESSMENT].

25. See, e.g., Craig Cox, *Trouble in Farm Country: Ag Runoff Fouls Tap Water Across Rural America*, EWG, <https://www.ewg.org/tapwater/trouble-in-farm-country.php#.WtEAwtPwZcA> [https://perma.cc/HG99-GATJ].

26. Jamie Konopacky & Laurie Ristino, *The Healthy Watershed Framework: A Blueprint for Restoring Nutrient-Impaired Waterbodies Through Integrated Clean Water Act and Farm Bill Conservation Planning and Implementation at the Subwatershed Level*, 47 ENVTL. L. 647, 649 (2017).

27. See generally Martin D. Smith et al., *Seafood Prices Reveal Impacts of a Major Ecological Disturbance*, 114 PROC. NAT'L ACAD. SCI. 1512 (Feb. 14, 2017), <https://www.pnas.org/content/pnas/114/7/1512.full.pdf> (detailing the economic impacts of hypoxic zones on shrimp fisheries).

28. U.S. DEP'T OF AGRIC., 2012 NATIONAL RESOURCES INVENTORY: SUMMARY REPORT 2–6 (2015), [https://www.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS/nrcseprd396218.pdf](https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcseprd396218.pdf) [https://perma.cc/7N4Z-647R].

in general, compromised soil health, along with the capacity for water filtration and the ability to buffer against extreme weather events.<sup>29</sup>

Forests, which provide critical ecosystem services like climate mitigation in the form of carbon sequestration, as well as habitat and clean water, are also under stress from warming temperatures and increased pathogens.<sup>30</sup> Unlike other countries where forests are largely publicly owned, “over half . . . of America’s 750 million acres of forest are” in private ownership, putting them at risk of conversion to non-forest uses.<sup>31</sup> Moreover, private forest lands comprise seventy-four percent of the forested areas of the densely-populated Northeast and Midwest and eighty-seven percent of the Southeast, and may be more vulnerable to the effects of climate change because of their fragmentation.<sup>32</sup> Soil carbon maps created by the Natural Resources Conservation Service (NRCS)<sup>33</sup> show the importance of these forested areas and wetlands to carbon sequestration in the Northeast, Southeast, and portions of the Midwest. Significantly, they visualize a marked lack of carbon sequestration in the productive farmlands in which one would expect to see a rich store.

#### B. *Rural Communities*

A persistent view of rural America is that it is a monolith in a perpetual state of decline.<sup>34</sup> The reality, however, is more complex, requiring a nuanced understanding in order to formulate effective national policy to address the social problems that endure in rural communities. A recent comprehensive study of rural areas by researchers Jessica Ulrich-Schad and Cynthia Duncan published in *The Journal of Peasant Studies* found that these communities fall into three general categories: amenity-

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29. See 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, 72–75 (2016).

30. FOURTH NATIONAL CLIMATE ASSESSMENT, *supra* note 24, at 233–34.

31. Sarah Hines & Amy Daniels, *Private Forestland Stewardship: Synthesis*, CLIMATE CHANGE RES. CTR. (Oct. 10, 2011), <https://www.fs.usda.gov/ccrc/topics/forest-stewardship> [<https://perma.cc/G3HA-CQ4J>].

32. *Id.*

33. *Rapid Carbon Assessment (RaCA)*, NAT. RES. CONSERVATION SERV.: SOILS (June 1, 2013), [https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/survey/?cid=nrcs142p2\\_054164](https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/survey/?cid=nrcs142p2_054164) [<https://perma.cc/2GJB-MPST>].

34. See, e.g., Eduardo Porter, *The Hard Truths of Trying to ‘Save’ the Rural Economy*, N.Y. TIMES (Dec. 14, 2018), <https://www.nytimes.com/interactive/2018/12/14/opinion/rural-america-trump-decline.html> [<https://perma.cc/3Y3F-CNK5>].

rich, transitioning, and chronically poor.<sup>35</sup> The chronically poor communities tend to be “[c]lustered in Appalachia and the rural South.”<sup>36</sup> Chronically poor communities are characterized by median incomes far lower than the national average, higher poverty rates, decreases in population (especially young people), and lower high school graduation rates. Transitioning rural areas are those communities that are undergoing demographic and economic changes after the serious loss of manufacturing, resource-based industries like forestry, and agricultural jobs.<sup>37</sup> While these communities across the Northeast, Northwest, and Midwest are showing population gain, they are continuing to lose younger people,<sup>38</sup> a trend that does not bode well for the future economic health of these areas. Finally, the “amenity-rich” communities benefit from natural riches such as mountains, coastline, and lakes.<sup>39</sup> Some of these communities, as one might expect, are found near major urban centers, like Hudson, New York, with its close proximity to New York City.<sup>40</sup> Significantly, poor and transitioning communities trail amenity-rich communities in believing conservation or environmental regulation is good for the community.<sup>41</sup>

Notwithstanding the range of experience within and across rural communities,<sup>42</sup> general differences between rural and urban communities exist that impact resilience capacity.<sup>43</sup> Poverty in rural areas remains

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35. See generally Richard Florida, *The 3 Rural Americas*, CITYLAB (June 1, 2018), <https://www.citylab.com/equity/2018/06/the-three-rural-americas/561791/> [<https://perma.cc/HQ3S-2KFH>] (reporting on a study set forth in Jessica D. Ulrich-Schad & Cynthia M. Duncan, *People and Places Left Behind: Work, Culture and Politics in the Rural United States*, 45 J. PEASANT STUD. 59, 59–79 (2018), [https://www.researchgate.net/profile/Jessica\\_Ulrich-Schad/publication/322390106\\_People\\_and\\_places\\_left\\_behind\\_work\\_culture\\_and\\_politics\\_in\\_the\\_rural\\_United\\_States/links/5a5e41540f7e9b4f783ba526/People-and-places-left-behind-work-culture-and-politics-in-the-rural-United-States.pdf](https://www.researchgate.net/profile/Jessica_Ulrich-Schad/publication/322390106_People_and_places_left_behind_work_culture_and_politics_in_the_rural_United_States/links/5a5e41540f7e9b4f783ba526/People-and-places-left-behind-work-culture-and-politics-in-the-rural-United-States.pdf)).

36. *Id.*

37. *Id.*

38. *Id.*

39. *Id.*

40. *Id.*

41. *Id.*

42. See, e.g., Richard Florida, *Some Rural Areas Are Better for Economic Mobility*, CITYLAB (Oct. 2, 2018), <https://www.citylab.com/equity/2018/10/rural-areas-are-better-economic-mobility/571840/> [<https://perma.cc/PUT2-9TNN>].

43. Brian Thilede et al., *6 Charts that Illustrate the Divide Between Rural and Urban America*, PBS NEWSHOUR (Mar. 17, 2017, 12:45 PM), <https://www.pbs.org/newshour/nation/six-charts-illustrate-divide-rural-urban-america> [<https://perma.cc/5JK3-XZ2T>].

higher than in metropolitan areas.<sup>44</sup> Rural communities continue to lose young adults to urban areas while seeing an in-migration of older Americans, resulting in a recent net population gain generally.<sup>45</sup> Another sign of the unique plight of rural America is the aging of American farmers,<sup>46</sup> and an estimated transfer of a staggering seventy percent of farmland within the next twenty years.<sup>47</sup> These changes have the potential to significantly reshape many rural communities as well as radically impact agricultural viability and food security.

In sum, the demographics and sheer mass of the natural resources that characterize rural America offer a unique opportunity to reimagine its role in our collective future. This role could be the linchpin of a sustainable America—the engine of our future resilience.<sup>48</sup> We may operationalize this new vision through changes in law and public policy that are guided by a resilience framework.

## II. OPERATIONALIZING A RURAL RESILIENCE FRAMEWORK

To show how a framework could operationalize resilience through law and policy, this Article uses the legislative opportunity presented by the Farm Bill. Recently reauthorized,<sup>49</sup> the Farm Bill is a prime policy vehicle due to its socio-ecological breadth as the law touches all

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44. *Id.*; see also Kelly Ann Holder et al., *Rurality Matters*, U.S. CENSUS BUREAU: RANDOM SAMPLINGS (Dec. 8, 2016), [https://www.census.gov/newsroom/blogs/random-samplings/2016/12/rurality\\_matters.html](https://www.census.gov/newsroom/blogs/random-samplings/2016/12/rurality_matters.html) [<https://perma.cc/SL98-99K9>] (reporting that as rurality increases, poverty and unemployment rates increase as well).

45. ECON. RESEARCH SERV., U.S. DEP'T OF AGRIC., *RURAL AMERICA AT A GLANCE 1* (2018), <https://www.ers.usda.gov/webdocs/publications/90556/eib-200.pdf?v=5899.2> [<https://perma.cc/D3JA-AUZP>].

46. *Beginning Farmers and Age Distribution of Farmers*, U.S. DEP'T AGRIC.: ECON. RES. CTR. <https://www.ers.usda.gov/topics/farm-economy/beginning-disadvantaged-farmers/beginning-farmers-and-age-distribution-of-farmers/> [<https://perma.cc/GSD3-YA2P>] (last updated Apr. 13, 2017) (illustrating a steady increase of farmer ages from 1978 to 2012).

47. *Family Farms*, US DEP'T AGRIC.: NAT'L INST. FOOD & AGRIC., <https://nifa.usda.gov/family-farms> [<https://perma.cc/8D37-AR6L>].

48. In fact, agriculture was once the engine of the nation's growth through resource extraction and export of agricultural goods, but often with the stain of human and natural resources exploitation. See generally R. DOUGLAS HURT, *AMERICAN AGRICULTURE: A BRIEF HISTORY* (Purdue Univ. Press rev. ed. 2002) (providing a history of American agriculture, including the young nation's agrarian economic foundation, cultivation of land, dispossession of Native Americans, and slave labor).

49. See generally Agriculture Improvement Act of 2018, Pub. L. No. 115-334, 132 Stat. 4490 (effective Jan. 1, 2019).

Americans as well as the vast working lands of the nation.<sup>50</sup> Moreover, because each farm bill has a duration of four or more years,<sup>51</sup> the potential exists for landscape level reforms that are harder to achieve through annually appropriated programs that are wrangled each year through Congress.

A. *Why Complex Policy Issues Need Legislative Frameworks*

*“Everything is designed. Few things are designed well.”<sup>52</sup>*

The Farm Bill provides a quintessential example of why frameworks are needed to legislate effective policy when addressing complex social problems. The Farm Bill, through policy accretion over the last eighty-plus years, attempts to achieve a host of policy goals focused around four main areas: (1) food security for low-income individuals and families through nutrition programs; (2) support of the agriculture sector through a “farm safety net,” marketing, and research; (3) conservation of working lands and forests through financial and technical assistance; and (4) rural development through grants and other programs.<sup>53</sup> Because Farm Bill programs are not developed holistically with guiding principles to achieve overarching social goals, a key policy opportunity to provide for a food secure future in our climate change era is squandered.<sup>54</sup>

A few examples provide a shorthand illustration of how aspects of the Farm Bill and the legislature’s disagreement as to the allocation of its funding undermines our future food security and resilience. First, crop insurance, a main component of the farm safety net, tends to incentivize

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50. On the signing of the 2014 Farm Bill, President Obama commented that the legislation was like a Swiss Army knife because it addressed so many policies affecting Americans across the country. See Press Release, Office of the Press Sec’y, Barack Obama, Remarks by the President at Signing of the Farm Bill (Feb. 7, 2014), <https://obamawhitehouse.archives.gov/the-press-office/2014/02/07/remarks-president-signing-farm-bill-mi> [https://perma.cc/6G9J-QBW2].

51. See RENÉE JOHNSON & JIM MONKE, CONG. RESEARCH SERV., WHAT IS THE FARM BILL? 1 (2018), <https://fas.org/sgp/crs/misc/RS22131.pdf> [https://perma.cc/6SB4-U2U7] (explaining that the Farm Bill renews about every five years and that most of the 2014 Farm Bill expired in 2018).

52. Otto (@meetotto), TWITTER (Dec. 3, 2017, 9:00 AM) (quoting Brian Reed), <https://twitter.com/meetotto/status/937365912935649285> [https://perma.cc/TMR8-TWHS].

53. Agriculture Improvement Act of 2018, Pub. L. No. 115-334, 132 Stat. 4490 (effective Jan. 1, 2019). See generally JOHNSON & MONKE, *supra* note 51.

54. Ristino & Steier, *supra* note 29, at 106–07 (describing how Congress fails to use the singular legislative opportunity presented by the Farm Bill to lay the policy groundwork for a food secure future).

risky crop production on marginal lands by inadequately linking actual planting risk to insurance premiums.<sup>55</sup> Because taxpayers subsidize crop insurance by paying for more than sixty percent of crop insurance premiums on average,<sup>56</sup> Americans unwittingly help fund these unsustainable practices.

Another shortcoming of the Farm Bill is the conservation title. Through this title, the federal government spends billions of taxpayer dollars to assist producers with improving environmental outcomes of their agricultural operations through the installation of conservation practices.<sup>57</sup> These funds are indispensable because much of our environmental policy intended to address the serious water and air pollution caused by agriculture relies on voluntary conservation rather than federal environmental regulations, from which the sector enjoys many exemptions.<sup>58</sup> Unfortunately, conservation dollars are being used for clean-up of the environmental harms (e.g., soil erosion) that result from some of the planting practices underwritten by federal crop insurance.<sup>59</sup> This waste of precious funds, at a time when there is already a serious unmet conservation funding need, illustrates well how the Farm Bill policies work at cross purposes.

Additionally, in passing the 2018 Farm Bill, Congress rejected a policy proposal that would have provided insurance-based premium discounts for the adoption of advanced conservation systems.<sup>60</sup> Congress also took that moment to create loopholes to commodity-subsidy-payment

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55. Joshua D. Woodard & Leslie J. Verteramo Chiu, *Soil Data Not Considered in Cornerstone U.S. Agricultural Policy* (Feb. 2016) (working draft), [http://www.foodandagpolicy.org/sites/default/files/Woodard%20Verteramo\\_WorkingPaper\\_SoilData%28Feb2016%29.pdf](http://www.foodandagpolicy.org/sites/default/files/Woodard%20Verteramo_WorkingPaper_SoilData%28Feb2016%29.pdf) [<https://perma.cc/CLG8-A5Z7>].

56. VINCENT H. SMITH, R STREET, *ACHIEVING RATIONAL FARM SUBSIDY RATES 3* (2017), <http://2o9ub0417chl2lg6m43em6psi2i.wpengengine.netdna-cdn.com/wp-content/uploads/2017/10/113.pdf> [<https://perma.cc/3TSX-QA8S>]. The federal government subsidizes on average about sixty-two percent of the cost of crop insurance premiums. *Id.* at 1.

57. The conservation title is codified as the Erodible Land and Wetland Conservation and Reserve Program. *See generally* 16 U.S.C. ch. 58 (2019) (providing for various conservation programs as well as requirements for soil and wetlands conservation).

58. *See generally* J.B. Ruhl, *Farms, Their Environmental Harms, and Environmental Law*, 27 *ECOLOGICAL L.Q.* 263, 293–315 (2000) (discussing the exemptions agriculture enjoys from various environmental laws like the Clean Water Act).

59. *See* Ristino & Steier, *supra* note 29, at 101–02.

60. *2018 Farm Bill Drilldown: Commodity Programs and Crop Insurance*, NAT'L SUSTAINABLE AGRIC. COALITION: BLOG (Dec. 14, 2018), <http://sustainableagriculture.net/blog/2018-farm-bill-commodity-subsidies-crop-insurance/> [<https://perma.cc/5RKS-SQVU>].

limits to benefit wealthy farmers.<sup>61</sup> Such policies perpetuate unsustainable commodity production while disincentivizing producers to enter into new markets like organic grains or grass-fed beef, which have the potential to generate more revenue for farmers and improve environmental resilience through sustainable production practices.<sup>62</sup>

During the same Farm Bill legislative process, the Environmental Working Group (EWG) recommended doubling conservation funds by 2022.<sup>63</sup> Instead, negotiations for the final Farm Bill focused on preventing serious cuts to the conservation funding as proposed by the House, ultimately resulting in a far less egregious reduction of \$5.2 billion dollars in the final bill.<sup>64</sup> Ironically, within the milieu of the Farm Bill debate, this was considered a conservation win.

Perhaps the most contentious Farm Bill policy debates have been over the nutrition title.<sup>65</sup> The Supplemental Nutrition Assistance Program (SNAP), the title's key program, provides essential food assistance to millions of low income Americans.<sup>66</sup> During the 2018 Farm Bill legislative process, the Republican-controlled House passed a version of the Farm Bill that would have created food insecurity for millions by reducing or eliminating food assistance to two million Americans and imposing expanded, untenable work requirements as a condition of

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61. *Top 10 Worst Provisions in the 2018 Farm Bill*, TAXPAYERS FOR COMMON SENSE (Dec. 11, 2018), <https://www.taxpayer.net/agriculture/top-10-worst-provisions-in-the-2018-farm-bill/> [<https://perma.cc/AJ2P-UJNX>] (detailing how the 2018 Farm Bill egregiously creates farm subsidy loopholes).

62. See Laurie Ristino, *Is the Farm "Safety Net" Safe?*, CTR. FOR PROGRESSIVE REFORM: CPR BLOG (Feb. 8, 2018), <http://www.progressivereform.org/CPRBlog.cfm?idBlog=9DF2420A-9FA9-EB04-61145CBC5F44B63E> [<https://perma.cc/5N3Q-H5HS>].

63. *Less Farm Pollution, More Clean Water: An Agenda for Conservation in the 2018 Farm Bill*, EWG (Sept. 20, 2017), <https://www.ewg.org/research/less-farm-pollution-more-clean-water> [<https://perma.cc/W69Q-VN7Z>].

64. *2018 Farm Bill Drilldown: Conservation*, NAT'L SUSTAINABLE AGRIC. COALITION: BLOG (Dec. 13, 2018), <http://sustainableagriculture.net/blog/2018-farm-bill-drilldown-conservation/> [<https://perma.cc/4ETL-D779>].

65. *Reviewing the 2018 Farm Bill Baseline*, AM. FARM BUREAU FED'N (Dec. 17, 2018), <https://www.fb.org/market-intel/reviewing-the-2018-farm-bill-baseline> [<https://perma.cc/T744-VWFE>] (reporting on the Congressional Budget Office's baseline estimates for the nutrition title at seventy-six percent of the total 2018 Farm Bill outlays).

66. See generally *Nutrition Assistance Program (SNAP)*, USDA: FOOD & NUTRITION SERV. (Apr. 25, 2018), <https://www.fns.usda.gov/snap/supplemental-nutrition-assistance-program-snap> [<https://perma.cc/T2TE-FX54>] (providing an overview of SNAP).

receiving food assistance.<sup>67</sup> The ensuing negotiations with the Senate, which left SNAP largely intact in its version of the bill, threatened to derail passage of the legislation.<sup>68</sup> Fortunately, the Senate ultimately prevailed in preserving SNAP benefits in the final bill.<sup>69</sup>

Now that a food insecurity tragedy has been averted again (a similar debate over SNAP benefits occurred during the 2014 Farm Bill<sup>70</sup>), the real question is why are we having this debate at all? The United States recognized the right to food in 1948 when it ratified the Universal Declaration of Human Rights.<sup>71</sup> Although the United States government incongruously maintains that its support for such a right does not create an enforceable legal duty, in practice, it has rightly pursued policies domestically and internationally to address hunger through both the Farm Bill and U.S. Agency for International Development food aid programs, respectively.<sup>72</sup> In other words, the United States has a de facto policy of food security, which is grounded in the right to food<sup>73</sup>—a moral imperative. If food security was an explicit—not implicit—policy goal of the Farm Bill, we could move beyond the cynical legislative attempts to undercut SNAP and on to productive policymaking that improves food security outcomes for all.

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67. ED BOLEN ET AL., HOUSE FARM BILL WOULD INCREASE FOOD INSECURITY AND HARDSHIP 2 (2018), <https://www.cbpp.org/sites/default/files/atoms/files/4-16-18fa.pdf>. [<https://perma.cc/D3GS-7V4L>].

68. See Vann R. Newkirk II & Olivia Paschal, *The Farm Bill's Threat to Food Security*, ATLANTIC (Sept. 6, 2018), <https://www.theatlantic.com/politics/archive/2018/09/the-farm-bills-threat-to-food-security/569464/> [<https://perma.cc/FV6N-A3VF>].

69. FOOD RESEARCH & ACTION CTR., ANALYSIS OF THE FINAL FARM BILL CONFERENCE REPORT: AGRICULTURE IMPROVEMENT ACT OF 2018 TITLE IV—NUTRITION 1 (2018), <http://frac.org/wp-content/uploads/2018-farm-bill-conference-report-analysis.pdf> [<https://perma.cc/TA7M-AH2D>].

70. Laurie Ristino, *Changing Coalitions and the 2014 Farm Bill*, JURIST (Feb. 27, 2014, 3:30 PM), <https://www.jurist.org/commentary/2014/02/laurie-ristino-farm-bill/> [<https://perma.cc/FL3S-MJKU>].

71. G.A. Res. 217 (III) A, Universal Declaration of Human Rights, art. 25 ¶1 (Dec. 10, 1948), [https://www.ohchr.org/EN/UDHR/Documents/UDHR\\_Translations/eng.pdf](https://www.ohchr.org/EN/UDHR/Documents/UDHR_Translations/eng.pdf) [<https://perma.cc/2RUC-N8T8>].

72. U.S. *Explanation of Vote on the Right to Food*, U.S. MISSION TO INT'L ORGANIZATIONS GENEVA (Mar. 23, 2017), <https://geneva.usmission.gov/2017/03/24/u-s-explanation-of-vote-on-the-right-to-food/> [<https://perma.cc/8XQJ-RG7C>].

73. Laurie Ristino, *Food Security: Concept, Challenges, and the Role of Attorneys*, 45 ENVTL. L. REP. 10659, 10659–60 (July 2015), made available at <https://ssrn.com/abstract=2634148> (describing the evolution of the concept of food security from its origins in the right to food).

The crux of the problem is that the Farm Bill is plainly not designed to build food security and resilience. Indeed, the Farm Bill legislative process is not guided by a clear set of shared policy goals with the aim of achieving an overarching purpose. The “purpose” as stated at the outset of the omnibus legislation is telling: “To provide for the reform and continuation of agricultural and other programs of the Department of Agriculture through fiscal year 2023 and for other purposes.”<sup>74</sup> This is, quite simply, a policy void. The unsurprising result is an amalgam of programs covering a myriad of policy issues that sometimes conflict, rather than policies that work collectively to achieve multiple, interlocking goals to benefit the American people, as would be provided by a cogent framework.

B. *Establishing the Rural Resilience Framework: Purpose and Principles*

The first step in developing effective policy is to set forth the social goals society seeks to achieve, with attention to “framing.”<sup>75</sup> A Farm Bill framed around resilience could define the legislation’s purpose as follows: to support a resilient America that, into the future, sustainably produces food, fiber, and ecosystem services for the nation, while providing for the economic well-being of the people that steward those services.

To achieve that overarching purpose, a set of principles is needed through which policy proposals would be screened. Below are suggested principles of a Rural Resilience Framework to provide guidance for the shaping of future farm bills in order to better address our pressing social issues. Both the purpose and principles could be hard-wired into the legislation by including them in the actual legislative language.

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74. Agriculture Improvement Act of 2018, Pub. L. No. 115-334, 132 Stat. 4490 (effective Jan. 1, 2019). *But see* Clean Air Act, 42 U.S.C. § 7401 (2018). The Clean Air Act is an example of Congress’ capability to pass complex legislation with a clear framework and comprehensive statement of purpose.

75. Given the political challenges of using the term “climate change” in the Farm Bill (a word search reveals the 2018 Farm Bill only mentions the term once substantively), a framework which reflects common values and avoids controversial terms is more likely to be successfully adopted. *See, e.g.*, Nat Kendall-Taylor & Sean Gibbons, *Framing for Social Change*, STAN. SOC. INNOVATION REV. (Apr. 17, 2018), [https://ssir.org/articles/entry/framing\\_for\\_social\\_change](https://ssir.org/articles/entry/framing_for_social_change) [<https://perma.cc/8X87-VFME>] (explaining that how advocates frame the impact of social issues, think about them, and talk about their solutions is key to their success).

### 1. Systems Thinking

Systems thinking, popularized by the scientist Donella Meadows in the early 1970s,<sup>76</sup> is a discipline of seeing the wholes rather than the parts.<sup>77</sup> This type of thinking facilitates social problem-solving by allowing one to better understand interconnections and minimize negative, unintended consequences.<sup>78</sup> As applied to complex policy development, a discipline of systems thinking would help legislators see the extent to which proposals work together to achieve social aims as well as potential unintended consequences of particular proposals, thereby maximizing positive social outcomes. In these ways, applying a systems discipline has the potential to create better policy than the usual linear<sup>79</sup> and, in the case of the Farm Bill, disaggregated process of policymaking.

### 2. Diversity and Complementarity

Social-ecological systems that are characterized by diversity and complementarity are more resilient.<sup>80</sup> For example, when a farm grows a diversity of crops, the failure of one crop will not undermine food provisioning altogether.<sup>81</sup> Diversity of organizations in human communities brings different strengths and overlapping functions that are beneficial to community resilience, thereby providing a range of responses and services at different scales. Complementary or redundant components in a system or community, on the other hand, provide a degree of “insurance” so that if one component fails, the systems can still function.<sup>82</sup> In this respect, local or regional food systems, among other positive benefits, provide complementary food availability to communities, rather

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76. See generally DONELLA H. MEADOWS, *THINKING IN SYSTEMS: A PRIMER* (Diana Wright ed., Earthscan 2008).

77. PETER SENGE, *THE FIFTH DISCIPLINE: THE ART & PRACTICE OF A LEARNING ORGANIZATION* 68–69 (Doubleday 2006).

78. See DAVID PETER STROH, *SYSTEMS THINKING FOR SOCIAL CHANGE* 14–16 (Joni Praded ed., 2015).

79. Richard J. Lazarus, *Super Wicked Problems and Climate Change: Restraining the Present to Liberate the Future*, 94 *CORNELL L. REV.* 1153, 1179–80 (2009).

80. See STURLE HAUGE SIMONSEN ET AL., *STOCKHOLM RESILIENCE CTR., APPLYING RESILIENCE THINKING: SEVEN PRINCIPLES FOR BUILDING RESILIENCE IN SOCIAL-ECOLOGICAL SYSTEMS* 3 (2015), <http://stockholmresilience.org/download/18.10119fc11455d3c557d6928/1459560241272/SRC+Applying+Resilience+final.pdf> [<https://perma.cc/6KED-DGQH>].

81. *Id.* at 4.

82. See *id.* at 4–5.

than sole reliance on conventional, large agri-business, which dominates the marketplace.<sup>83</sup>

### 3. Equity and Inclusion

Human systems are only resilient when they are equitable and inclusive for all people. Resilience capacity can vary greatly between different societal levels and within socioeconomic groups between, for example, race and gender.<sup>84</sup> Racial and gender inequities have plagued American agriculture since Colonial America. A modern example of this institutional problem is the *Pigford v. Glickman* class action, in which the USDA was found to have discriminated against black farmers in terms of access to farm programs on the basis of race between 1983 and 1997.<sup>85</sup> In an effort to address these issues, the Farm Bill has since incorporated programs targeting beginning and socially disadvantaged farmers. However, in light of the persistent inequities in both the production of and access to food, there is a patent need for a comprehensive policy approach that addresses barriers to Farm Bill production programs as well as improved access to healthy food in the nutrition programs.

### 4. Adaptation and Continuous Learning

As discussed previously, a characteristic of resilient systems in a climate change world is continuous evolution or adaptation.<sup>86</sup> This change requires the continuous learning of a broad range of stakeholders, including learning that informs law and policy reform to better facilitate the ongoing process of resilience. Learning to improve agriculture and food policy is fundamentally hindered by a lack of agriculture and food system transparency, and, as discussed above, in some cases, a lack of data to measure the effectiveness of federal programs. For example, in the

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83. See generally JAMES MACDONALD ET AL., ECONOMIC RES. SERV., U.S. DEP'T AGRIC., THREE DECADES OF CONSOLIDATION IN U.S. AGRICULTURE (2018), <https://www.ers.usda.gov/webdocs/publications/88057/eib-189.pdf?v=0> [<https://perma.cc/3U5M-P3CA>] (detailing the consolidation over the last three decades of both commodity crop and livestock production into large operations).

84. See U.S. AGENCY FOR INT'L DEV., UNDERSTANDING GENDER EQUITY AND SOCIAL INCLUSION 2 (2018).

85. *Pigford v. Glickman*, 185 F.R.D. 82, 112–13 (D.D.C. 1999). See generally TADLOCK COWAN & JODY FEDER, CONG. RESEARCH SERV., THE *PIGFORD* CASES: USDA SETTLEMENT OF DISCRIMINATION SUITS BY BLACK FARMERS 1 (2013), <http://nationalaglawcenter.org/wp-content/uploads/assets/crs/RS20430.pdf> [<https://perma.cc/DU23-ELLH>] (providing an overview of the *Pigford* cases).

86. See SIMONSEN ET AL., *supra* note 80, at 12.

2008 Farm Bill, Congress passed a law that prohibits the USDA from releasing information related to an agricultural producer's operation that was provided to participate in a USDA program.<sup>87</sup> The practical effect of this provision has been to stymie public research into, among other things, the efficacy of Farm Bill conservation programs.

C. *Applying the Rural Resilience Framework to the Farm Bill*

To reform the Farm Bill, we would evaluate policy proposals for how well they help achieve the purpose set forth above by screening each through the framework principles. To recap, that purpose is comprised of three major interlocking components of societal resilience: environmental health, food security, and economic well-being. Because the overall resilience of much of rural America has been compromised, a fundamental task of any policy impacting this segment of our nation is to build resilience capacity. With that in mind, a farm bill developed using a resilience framework would seek to include programs that, consistent with the purpose and principles outlined above, require the following mutually-reinforcing activities:

- support the comprehensive development of diversified, sustainable, and accessible food and agricultural systems; and
- support the rebuilding of environmental health through rigorous measurement, continuous program improvement, and producer environmental performance.

Since 2008, progress has been made through the advocacy efforts of “good food” and conservation groups to include a range of programs in the Farm Bill that facilitate local and organic production, healthy food access, and beginning and socially disadvantaged farmers.<sup>88</sup> Unfortunately, these programs still represent a fraction of Farm Bill spending.<sup>89</sup> Local and regional food systems and healthy food access

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87. 7 U.S.C. § 8791(b) (2018). For an analysis of the negative impacts of this law, see generally RENA STEINZOR & YEE HUANG, CTR. FOR PROGRESSIVE REFORM, GOING DARK DOWN ON THE FARM: HOW LEGALIZED SECRECY GIVES AGRIBUSINESS A FEDERALLY FUNDED FREE RIDE (2012), [http://progressivereform.org/articles/Agricultural\\_Secrecy\\_1213.pdf](http://progressivereform.org/articles/Agricultural_Secrecy_1213.pdf) [<https://perma.cc/XR3J-BW5G>].

88. See *What's in the 2018 Farm Bill? The Good, the Bad and the Offal...*, FARM AID: BLOG (Dec. 20, 2018), <https://www.farmaid.org/issues/farm-policy/whats-in-the-2018-farm-bill-the-good-the-bad-and-the-offal/#local> [<https://perma.cc/S7CD-743R>] (providing commentary on farm bill policy gains for local food systems and healthy food access).

89. In its summary of the 2018 Farm Bill, the National Sustainable Agriculture Coalition indicates that programs for local, regional, and beginning/disadvantaged farmers represent a small portion of the total funding outlays. See *2018 Farm Bill by the Numbers*, NAT'L

programs could be expanded without increasing overall Farm Bill outlays through cost-saving measures in commodity subsidy programs. For instance, Congress could institute means testing for crop insurance and direct payment benefits eligibility, thereby limiting commodity support to only those producers who cannot effectively manage their own risk.<sup>90</sup> The American Enterprise Institute, in a recent critique of commodity subsidies, found that the top ten percent of farms by sales received sixty-eight percent of all crop insurance premium subsidies.<sup>91</sup> This policy of large producer subsidization perpetuates the consolidation of commodities markets and dulls the market signals that could promote diversification into new, more sustainable markets, such as organic, local, and regional markets with attendant higher profit margins for farmers.<sup>92</sup> A resilient Farm Bill would implement a policy of sustainable agricultural diversification of producers, crops, and operation sizes, supporting linkages between consumers and producers through innovative marketing programs and the re-creation of distribution infrastructure.

Similarly, our national policy of voluntary working lands conservation is a fundamental barrier to resilience. Taxpayers have funded billions of dollars through the Farm Bill to improve conservation outcomes on crop, range, pasture, and forest land that, by and large, have resulted in temporary environmental mitigation measures.<sup>93</sup> Our major

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SUSTAINABLE AGRIC. COALITION: BLOG (Dec. 21, 2018), <http://sustainableagriculture.net/blog/2018-farm-bill-by-the-numbers/> [<https://perma.cc/8JZJ-7BSX>].

90. This proposal has wide appeal across the political spectrum. See, e.g., David Bahr, *R Street Disappointed with House Agriculture Committee's Farm Bill Draft*, R STREET (Apr. 13, 2018), <https://www.rstreet.org/2018/04/13/r-street-disappointed-with-house-agriculture-committees-farm-bill-draft/> [<https://perma.cc/U4P7-FCQK>] (describing the farm safety net as broken because it subsidizes agri-business while failing those farmers in need and harming the environment and trade relations).

91. Anton Bekkerman et al., *Where the Money Goes: The Distribution of Crop Insurance and Other Farm Subsidy Payments*, AM. BOONDOGGLE (Jan. 9, 2018), <http://www.aei.org/publication/where-the-money-goes-the-distribution-of-crop-insurance-and-other-farm-subsidy-payments/> [<https://perma.cc/6DSQ-CRHW>].

92. Ben Lilliston, *The Problem with Betting American Agriculture on Exports*, HILL (June 5, 2018, 4:00 PM), <https://thehill.com/opinion/energy-environment/390828-the-problem-with-betting-american-agriculture-on-exports> [<https://perma.cc/MU3M-LF4V>].

93. See, e.g., SOREN RUNDQUIST & CRAIG COX, ENVTL. WORKING GRP., FOOLING OURSELVES: VOLUNTARY PROGRAMS FAIL TO CLEAN UP DIRTY WATER 8 (2016), [https://static.ewg.org/reports/2016/fooling-ourselves/EWG\\_FoolingOurselves.pdf?\\_ga=2.109599173.1197739830.1554125962-1990839781.1547661111](https://static.ewg.org/reports/2016/fooling-ourselves/EWG_FoolingOurselves.pdf?_ga=2.109599173.1197739830.1554125962-1990839781.1547661111) [<https://perma.cc/FY99-3TCP>] (detailing through spatial analysis how many farmers in Iowa fail to maintain installed conservation practices such as stream buffers and grassed waterways, which are key to reducing nutrient water pollution).

waterways continue to reel from nutrient run-off pollution,<sup>94</sup> and soil erosion remains a serious problem.<sup>95</sup> In addition, regulating air pollution from Concentrated Animal Feeding Operations (CAFOs) is now even more challenging with Congress' recent amendment of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) to exempt these large industrial operations from reporting emissions.<sup>96</sup>

If our environmental protection policy on working lands remains voluntary, we must fundamentally rethink our approach. Instead of cost-sharing for conservation practices that we hope will improve environmental performance, Farm Bill programs should be retooled to pay producers for measurable and verifiable environmental performance, including both pollution reduction and environmental gains like additional carbon sequestration. One of those performance requirements should be achieving zero soil loss and building overall soil health. Currently, our federal policy only requires producers to reduce soil erosion to twice the rate that it is replenished, while still retaining Farm Bill benefits<sup>97</sup>—in effect, a soil loss policy.

Another social goal that would be facilitated through a resilience-based Farm Bill is the adaptation of agricultural production as indicated by evolving climatic conditions. Planning for agricultural succession (meaning changing crop varieties and species as well as planting practices)<sup>98</sup> is crucial to resilience in view of our rapidly evolving climate. In this regard, new research indicates that the national precipitation line that demarks the dry West from the more humid states of the East has migrated 140 miles eastward since the 1800s.<sup>99</sup> For states like Iowa, the

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94. See Konopacky & Ristino, *supra* note 26, at 648–51.

95. See Ristino & Steier, *supra* note 29, at 66–69.

96. See Laurie Ristino, *Congress Just Gave Big Agriculture the Pollution Green Light*, HILL (Mar. 23, 2018, 2:20 PM), <https://thehill.com/opinion/energy-environment/379971-congress-just-gave-big-agriculture-the-pollution-green-light> [<https://perma.cc/3KYU-CPSG>].

97. Ristino & Steier, *supra* note 29, at 68, 101.

98. USDA calls this suite of strategies “adaptation.” I use “agricultural succession” because like the term “environmental succession,” it implies a broader system shift. For a USDA adaptation resource, see MARIA K. JANOWIAK ET AL., U.S. DEP’T OF AGRIC., ECON. RES. SERV., ADAPTATION RESOURCES FOR AGRICULTURE: RESPONDING TO CLIMATE VARIABILITY AND CHANGE IN THE MIDWEST AND NORTHEAST (2016), <https://www.climatehubs.oce.usda.gov/sites/default/files/AdaptationResourcesForAgriculture.pdf> [<https://perma.cc/MB3P-W4NW>].

99. *A North American Climate Boundary Has Shifted 140 Miles East Due to Global Warming*, YALE ENVIRONMENT 360 (Apr. 11, 2018), <https://e360.yale.edu/digest/a-north->

largest producer of water-loving corn,<sup>100</sup> which now backs up against the new precipitation boundary, this shift will require transitioning farming practices and, in the not-too-distant future, transitioning crops. Simply put, where and how crops are planted in the United States must change. Taking into account its unique policy entanglement with the agriculture sector,<sup>101</sup> the federal government has a singular role to play in facilitating resilience by incentivizing climate smart cropping and transition of production to appropriate geographic regions through targeted financial and technical assistance.<sup>102</sup>

### CONCLUSION

Rural America is the fulcrum upon which our nation's resilience rests in the climate change era. Its immense mass means rural America is the primary locus of our clean water, air, habitat, food, and fiber. Yet, the reality is that the economies and natural systems that comprise much of rural America have been compromised by changing economic fortunes and a history of exploitation. Although the so-called rural-urban divide has been often characterized as a liability, the urbanized nature of America provides a unique opportunity to reimagine rural America as the engine of our collective resilience. Adopting a Rural Resilience Framework can help channel the efforts of multiple actors working to improve social outcomes by providing an overarching purpose and foundational principles through which to evaluate proposals and direct efforts to improve the environmental and economic well-being both of rural communities and the nation. With its policy impacts over rural America through legislation like the Farm Bill, the government's leadership in implementing such a framework is necessary to positively shape the behavior of both producers and consumers to ensure economic and

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american-climate-boundary-has-shifted-140-miles-east-due-to-global-warming [https://perma.cc/8HMQ-E64A].

100. *Cash Receipts by Commodity, State Ranking Database, 2017*, ECON. RES. SERV., [https://data.ers.usda.gov/reports.aspx?ID=17844#Pea38fe21b3a14bccba41db663db1e506\\_2\\_251iTOR0x40](https://data.ers.usda.gov/reports.aspx?ID=17844#Pea38fe21b3a14bccba41db663db1e506_2_251iTOR0x40) [https://perma.cc/U85A-UH3W] (to search for a particular commodity crop such as corn, scroll down the left-side menu and select the crop).

101. See generally HURT, *supra* note 48 (describing the singular role federal policy plays in supporting the agriculture sector, especially since the Great Depression).

102. The federal government's international aid strategy for addressing food security has already evolved to embrace "Climate Smart Agriculture" and its three goals—"sustainably increasing productivity and income, increasing adaptation, and reducing greenhouse gas emissions"—as a core strategy. See FEED THE FUTURE, CLIMATE SMART AGRICULTURE IN FEED THE FUTURE PROGRAMS 1 (2016), [https://www.agrilinks.org/sites/default/files/resource/files/Framework%20CSA%20paper%20final%20\(1\).pdf](https://www.agrilinks.org/sites/default/files/resource/files/Framework%20CSA%20paper%20final%20(1).pdf) [https://perma.cc/B4WB-RT72].

environmental resilience in the face of climate change. Current federal policy is tragically failing to provide for a food-secure and sustainable future because it is not designed to do so. Adopting a Rural Resilience Framework could provide the federal government with the necessary paradigm to begin building a sustainable policy for food and farming in Anthropocene America.