

Losing Ground

*Farmland Consolidation and Threats to New
and Black Farmers and the Future of Farming*

www.ucsusa.org/resources/losing-ground

Rafter Ferguson

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Overview

Over the past century, farms in the United States have steadily grown in size while dwindling in number. Farm numbers have fallen from a peak of nearly 6.5 million in 1920 to just more than 2 million today, while average farm size has tripled (Dimitri, Effland, and Conklin 2005; USDA NASS 2019a). Farmland consolidation—the trend toward larger, fewer farms—is closely intertwined with another profound change in agriculture: the replacement of labor by capital, in the form of machinery and chemical inputs. This shift toward larger and more capital-intensive farms has occurred as a result of public policies and markets that demand and reward maximum yields of a few commodity crops. But this emphasis on productivity has also brought about a complex array of negative social consequences. The consolidation of farmland, in particular, is associated with the barriers faced by new farmers and the hollowing out of rural communities.

The environmental consequences of agriculture's transformation are the subject of widespread public and scholarly discussion. But the connections between farmland consolidation and the social and economic crises faced by rural communities have received less attention (Horrigan, Lawrence, and Walker 2002; Kimbrell 2002; Kremen, Bacon, and Iles 2012). By its nature, consolidation drives down the number of farmers and farm jobs, undermining the historical foundation of rural economies and driving the depopulation of rural communities (Johnson and Lichter 2019; Cofer 2014). In the midwestern states, an important center of agricultural production, these issues are of particular concern. Just eight midwestern states (Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio, and Wisconsin) account for more than a third of the nation's crop sales—and these states have experienced especially severe consolidation. Nationally, harvested cropland on large farms (1,000 acres in size or larger) nearly doubled between 1978 and 2017—while in rural counties in the Midwest it more than quintupled (Haines, Fishback, and Rhode 2014; USDA NASS 2020).

These issues compound the challenges posed by an aging farming population and the persistent, long-run decline in the share of new farmers, forecasting serious obstacles to the revitalization of rural communities (Carlisle et al. 2019). In this study, the Union of Concerned Scientists (UCS) focused on these eight powerhouse agricultural states that have experienced severe consolidation, identifying connections between consolidation and the declining share of new farmers. While the proportion of new farmers has declined across the country over the past four decades, we found that in these states it declined 56 percent faster in counties experiencing more rapid consolidation than in those experiencing slower consolidation.

The negative effects of decades of farmland consolidation are felt across all rural communities, but they are not distributed equally. For Black farmers, the fierce competitive pressures exerted by a century of consolidation have always been compounded by the shameful history of intentional, systematic, institutional racism. Racist discrimination amplified the pressures brought by consolidation, and together these forces drove a 98 percent reduction in the number of Black farmers between 1920 and 2017. In contrast, the number of White farmers declined by 65 percent over the same period (Haines, Fishback, and Rhode 2014; USDA NASS 2020).

Of course, the history of land dispossession in the United States is older than the last century. The violent displacement and theft of land from Native communities form the context and backstory for this study. Our focus on farmland consolidation over the past century puts important issues beyond the scope of this report, including a reasonable accounting for the crimes of colonization, the institutionalized systems of land theft that followed, and their impacts through the 20th century and beyond (Leonard, Parker, and Anderson 2020). Further, due to limitations in available data, along with the complex challenges created by the system of land tenure and related policies imposed on tribal governments in the 19th century, it is not possible to address here how farmland consolidation has affected Native farmers (Indian Land Tenure Foundation 2020). These grave injustices, both historical and ongoing, nevertheless form the foundation for the issues we discuss here.

For this study, we assessed the extent and distribution of farmland consolidation in the United States from 1978 to 2017 at the county level, both nationally and in the Midwest. We also investigated connections between trends in land consolidation, new farmer entry, and changes in the number of Black farmers. To investigate new farmer entry, we use (1) farmer age and experience (as an indicator of new farmer entry) and (2) the value of farmland (as a proxy for farmland price, a barrier to new farmer entry), all at the county level. In order to better understand the changing status of Black farmers (and deal with limitations of the available data, described below), we calculate the proportion of Black farmers among all farmers at the state level and examine the changing ranks of states by this proportion over time.

The convergence of environmental and social crises in rural communities points toward the need for broad and equitable land access to enable a new generation of farmers to steward the land, produce healthy food, and revitalize regional economies (Carlisle et al. 2019). Change is inevitable, as our aging farm population foreshadows the transfer of 44 percent of the nation's farmland over the next 10 years (Thapar 2020). But the consolidation of farmland pushes us in the opposite direction of the change we need: exacerbating barriers to new farmers, amplifying inequality, hollowing out rural communities, and leading us further from a just and equitable food system that works for everyone (Carlisle et al. 2019).

What Is Farmland Consolidation, and Why Does It Matter?

Since the 1920s, the number of farms has steadily fallen while farm acreage has been absorbed by larger and larger farms (MacDonald, Hoppe, and Newton 2018). Consolidation occurs when farmers exit farming, voluntarily or otherwise, and the land they farmed is taken up by other operations. Over the past century, farmers left agriculture in droves—and employment in agriculture followed them. In 1920, 26 percent of the workforce was employed in agriculture, compared with less than 2 percent today (Lebergott 1966; Dimitri, Eftland, and Conklin 2005; USDA ERS 2020). Although the long-run trend has been consolidation for all types of farm, recent decades have seen a divergence between trends for crop farms and animal agriculture, as pasture and rangeland shift toward smaller acreage, while consolidation of cropland continues apace (MacDonald, Hoppe, and Newton 2018; Gardner 2002).

The consistent trajectory of farmland consolidation is commonly attributed to several driving forces: inherent economies of scale in capital-intensive agriculture, the emergence of labor-saving technologies that allowed farmers to manage larger and larger plots of land, and the effects of competition between smaller and larger farms (MacDonald, Hoppe, and Newton 2018). These factors are important, but to understand their role we must consider them in the

context of more than 80 years of government policies that have disproportionately benefited large farms. Many of these policies were designed specifically with this aim—from the New Deal farm programs of the 1930s through the “get big or get out” farm policies that began in the 1950s and continue in more or less implicit forms to this day (Rosenberg and Stucki 2017). Since the 1980s, the backbones of federal farm policy have disproportionately benefited larger farms. Consequential shifts have included the phasing out of nonrecourse loans and price floors in favor of one-time direct payments and market-oriented crop insurance and an increasing reliance on production for global markets as a temporary fix for low domestic prices (Dimitri, Effland, and Conklin 2005; Cai 2019; Burns and Prager 2016; Roberts and Key 2008; Ahearn, Yee, and Korb 2005).

Consolidation—the trajectory toward larger and fewer farms—is distinct from but related to concentration of farmland ownership. Farmers often expand their operations by renting additional farmland rather than buying it. Indeed, almost 40 percent of US farmland is rented, and most farms operate on a mix of owned and rented farmland (Bigelow, Borchers, and Hubbs 2016). The relationship between concentration of farmland ownership and consolidation of farmland is complex—and further complicated by the fact that trends in farmland ownership are influenced by a patchwork of state-level laws and regulations governing ownership and investment (Freedgood et al. 2020). Here we focus primarily on farmland operated rather than farmland owned and follow standard practice in considering farm size in terms of the total area operated, including both owned and rented land.

THE PROBLEMS WITH LARGER FARMS

There is variation between regions, methods, and indicators, but the preponderance of the evidence points to a broad range of detrimental effects of consolidation on rural communities (Lobao and Stofferahn 2008).

Farmland is a foundational source of wealth and political power (Frankema 2005; Mitchell 2001; Nelson 1978). The capture of farmland by a shrinking number of farmers and corporations is also the capture of the land’s capacity to generate wealth and prosperity—and the exclusion of others from those benefits. Rural communities suffer from this loss, as the loss of agricultural employment leads to long-run depopulation and the loss of crucial social infrastructure such as schools, hospitals, and banks (Johnson and Lichter 2019).

For most of US history, midsize farms (between 50 and 999 acres in size) have been the economic foundation of rural communities (Mulik 2016). Over recent decades, midsize farms have experienced drastic losses triggered by changes in federal farm policy and increasing concentration and vertical integration in the farm and food sector. This loss of midsize farms, together with the growth of large farms and the relative stability of small farms, has been described as the “hollowing out” of US agriculture (Kirschenmann et al. 2008). The presence of midsize farms is associated with a more civically engaged middle class, more equitable distribution of income, and healthy community social fabric (Lyson, Torres, and Welsh 2001; Lobao 1990). Consolidation of farmland, on the other hand, has been connected with poverty and inequality in the north central United States (Crowley and Roscigno 2004).

The growth in farm size has been associated with landscape simplification—the process of replacing natural vegetation with large-scale monoculture production, creating landscapes that require more fertilizers and pesticides and are more vulnerable to erosion (Landis 2017;

Brown and Schulte 2011; Allan 2004). Larger farms rent more land, and the uncertainty and short time span associated with renting inhibits the adoption of soil-building conservation practices (such as cover cropping or agroforestry) that may take a long time to pay off (Ranjan et al. 2019; Richardson 2018; Adusumilli and Wang 2019).

THE LOSS OF BLACK FARMS, FARMERS, AND FARMLAND

Farmland in the United States has always been highly concentrated among White male farmers and owners—but it was not always as concentrated as it is today (Horst and Marion 2018; Gilbert, Wood, and Sharp 2002). In the years after emancipation, formerly enslaved Black farmers struggled to prosper under the new exploitative arrangements of sharecropping. Through incredible collective persistence in the face of exclusion and violence, by 1920 Black farmers made up 14 percent of all US farmers, collectively owning approximately 15 million acres of farmland (Banks 1986; Reynolds 2002). By 1978, the beginning of our study, the number of Black farmers had declined by 95 percent and Black-owned farmland by nearly 80 percent (Banks 1986). In 2017, Black farmers made up only 1.6 percent of US farmers (USDA NASS 2019b).

While mounting competitive pressures that were a cause and consequence of decades of consolidation triggered steep declines in farms and farmers for all groups, the decline for Black farmers has consistently been much more severe than for White farmers—estimated by some to be as much as two and a half times as severe (Browning 1982). Data from the US Department of Agriculture (USDA) Census of Agriculture (COA) make it appear that between 1978 and 2017, the decline of Black farmers has slowed and Black-owned farmland has increased. These apparent trends can be attributed entirely to statistical adjustments that only began to be applied in 2002, along with the concerted expansion of outreach to Black farmers since that time (along with other historically undercounted groups—see below).

This historic dispossession of Black farmers was accomplished through a variety of legal and quasi-legal means. Economists and historians have documented the long history of systemic discrimination at the USDA, particularly through exclusion from timely access to credit and other services vital to farmers—leading to foreclosure and land loss in many cases (Daniel 2013; Gilbert, Sharp, and Fezin 2002; Browning 1982). The continuation of this pattern of discrimination was confirmed by the success of a class action suit in 1997 (Cowan and Feder 2012). Antiquated laws and policies that regulate “heirs’ property”—land that has passed down without a will and left the owner without a clear title—have been identified as one of the leading causes of involuntary Black land loss, leaving landowners vulnerable to involuntary sale or seizure of their property (Mitchell 2001). Clear title is a requirement for accessing many vital federal farm programs, including loans, direct payments, and conservation programs, which excludes farmers with heirs’ property and leaves them in a precarious position in an already challenging farm economy. Systemic racism, particularly as it manifests in economic disparity, creates barriers for Black farmers to access legal resources needed to create wills or remedy the lack of clear title to land. Heirs’ property laws affect an estimated 40 percent or more of Black-owned land in the United States (Gaither 2016).

The discrimination faced by Black farmers has always been in addition to the competitive and financial pressures faced by all farmers. Black farmers were and are less likely to operate large farms. They therefore have been less likely to benefit from any of the policies that have encouraged and supported consolidation and less likely to benefit from the government

programs that primarily benefit larger farms. They are therefore also less likely to experience the competitive advantage experienced by larger farms (Gilbert, Sharp, and Fezin 2002). Most significantly, the dispossession of Black farmers has taken away a major means of creating and sustaining wealth and has reinforced systemic and persistent racial inequality (Hickmott 2016; King et al. 2018). Researchers estimate that land theft has robbed the Black community of \$3.7 to \$6.6 billion in property and income (Newkirk 2019).

While the loss of Black farms, farmland, and farmers has been well described by academic researchers and journalists, little research has specifically addressed the connections between farmland consolidation and disproportionate racial impacts in the farming sector.

Assessing the Implications of Farmland Consolidation for New Farmers and Black Farmers

DATA AND METHODS

This analysis draws primarily on COA data at the county scale, across the 48 contiguous US states. Hawaii and Alaska are not included in the analysis, having small amounts of cropland and pasture compared to other states (Bigelow and Borchers 2017). Starting with the most recent COA in 2017, we analyze roughly 20-year intervals to capture both recent and longer-term trends: 1978, 1997, and 2017. All data for 1978 and demographic variables for 1997 were obtained from a dataset compiled from historical COA data by third-party researchers (Haines, Fishback, and Rhode 2014). Other data for 1997 and all data for 2017 were obtained from the USDA National Agricultural Statistics Service (NASS) ad hoc query tool Quickstats (USDA NASS 2020).

FARM SIZE AND FARMLAND VALUE

To understand the extent and distribution of consolidation, we accessed COA data on the number of farms and the number of acres in each of 12 size classes: one to nine; 10 to 49; 50 to 69; 70 to 99; 100 to 139; 140 to 179; 180 to 219; 220 to 259; 260 to 499; 500 to 999; 1,000 to 1,999; and 2,000 or more acres. We aggregated these classes into small (one to 49 acres), midsize (50 to 999 acres), and large (1,000 or more acres) (Mulik 2016).

The difficulty of accessing farmland is one of the primary barriers to new-entry farmers (Rippon-Butler 2020). To gain better insight into this barrier, we assessed the trends and variation in the cost of farmland. We accessed COA data on farmland value per acre as a proxy for land costs. Dollar values for 1978 and 1997 were adjusted for inflation (to 2017 dollars) using the GDP deflator series from the US Bureau of Economic Analysis (Federal Reserve Bank of St. Louis 2020).

AGE AND EXPERIENCE

In the interest of better understanding new-entry farmers and the crisis of the aging farming population, we assessed the distribution and change of farmer age and experience across our data set. We accessed data on average farmer age, number of farmers under 35 years of age, number of farmers with less than five years of experience, and number of farmers with 10 or more years of experience. Note that questions concerning years of experience was not

collected until the 1982 COA, and we based our analysis of changing distributions of farmer experience levels using that 1982 data as a proxy for 1978 data. Our estimates of the level of change in farmer experience are therefore somewhat conservative. No other data was drawn from the 1982 COA.

CHALLENGES WITH COA DATA

Using COA data to understand demographic shifts over time is complicated by numerous changes in how the Census Bureau (1978) and later the USDA (1997 to 2017) have gathered, tabulated, and adjusted data on farmers. Before 2002, the COA counted only one farmer per farm, increasing up to three in 2002, and then up to four in 2017. On the same farm where previously the male head of household was the only one counted, later the count could include other members of the household. In this scenario, 2017 data would make it appear there are more farmers, more diverse farmers (by gender and potentially other factors), and younger farmers, when in fact the only difference is in COA methods (Census Bureau 1981; USDA NASS 1999a; USDA NASS 1999b; USDA NASS 2004a; USDA NASS 2004b; USDA NASS 2009; USDA NASS 2014; USDA NASS 2018).

Additional changes in USDA methodology since 1997 further complicate analysis of demographic data. In 2002, the USDA began applying statistical adjustments to its published data to account for missing or nonresponding farms and has continued to refine its methodology in each successive COA. These adjustments especially affect the data concerning groups that the COA has historically undercounted: women farmers, small farms, and particularly Black farmers. Multiple independent studies have demonstrated a history of extreme undercounting of Black farmers in the COA in the 20th century—sometimes by as much as 49 percent (Rosenberg 2017). And in 2017, 60 percent of the total number of Black-operated farms reported by the COA, along with 53 percent of the reported acres farmed by Black farmers, did not reflect actual census responses but rather represented statistical adjustments to the raw counts (compared with 37 percent and 23 percent, respectively, for White farmers) (USDA NASS 2018).

In 2002, the USDA, in addition to introducing these new statistical adjustments, also began changing how it gathered data on historically undercounted groups, employing outreach and promotion to improve its coverage of women and minority-group farmers and small farms (USDA NASS 2004a). In 2007, it increased the scale of these activities and began partnering with community-based organizations in order to increase participation and response from historically undercounted groups (USDA NASS 2009). The USDA ramped up targeted outreach and promotion again in 2012, and outreach seems to have continued at that level in 2017 (USDA NASS 2014; USDA NASS 2018). These changes introduce another potential source of misleading apparent trends, reflecting changes in the COA rather than real changes in the world.

These statistical adjustments and outreach efforts improve the richness and accuracy of the COA (Pilgeram et al. 2020; Rosenberg and Stucki 2019). At the same time, they make it difficult to assess changing conditions for farmers in historically undercounted groups. Sadly, the full knowledge of these changes in the COA has not stopped the USDA (and as a result, the popular press) from reporting apparent increases in the number of women farmers and Black farmers as if they were authentic trends in agriculture rather than artifacts of statistical adjustments and the slowly increasing accuracy of the COA (Pilgeram et al. 2020; Rosenberg and Stucki

2019). Our approach to dealing with these challenges in analyzing the shifting status of Black farmers is described in the following section.

CHALLENGES WITH ESTIMATES OF BLACK FARMERS AND FARMLAND

In order to investigate the impact of consolidation on Black farmers, we accessed data on the number of White and Black farmers in addition to aggregate totals. For 1978 and 1997, we calculated figures for White farmers (not supplied by the COA) by subtracting figures for “Black and other races” from the aggregate totals.

Given the challenges with COA data described above, it was necessary to proceed with a method that would make minimal assumptions about consistency in data collection over time. First, in order to align 2017 data with earlier years, in which the COA counted only a single farmer per farm, we accessed data for “Primary Producers,” a new category introduced by the USDA NASS for the 2017 COA that identifies a single most-involved farmer at each farm. As Primary Producer data are only available at the state level, we aggregated county-level data from 1978 and 1997 to the state level.

Second, even with the use of the single-farmer Primary Producer data, the other changes in USDA methods complicate comparison across years, particularly for Black farmers. We therefore normalized the state-level data by (1) calculating the internal proportion of Black farmers for each state, and (2) ranking the states by that proportion. Changes in rank thereby show relative changes in the proportion of Black farmers—that is, dropping rank signals relative decline in the proportion of Black farmers in a given state compared to other states and rising rank shows relative increase in proportion. By examining the change in states’ rankings over time, this approach affords an opportunity to gain insight on the impacts of consolidation while avoiding assumptions about data consistency.

ANALYSIS

To address the extent and geographic variability of consolidation, we analyzed the changing distribution of farmland across small (one to 49 acres), midsize (50 to 999 acres), and large (1,000 or more acres) farms, both for all farmland and for harvested cropland only. For our measure of consolidation, we calculated the proportion of farmland and harvested cropland held in farms 1,000 acres in size or larger.

BARRIERS TO THE NEXT GENERATION OF FARMERS

To account for the changes in COA methods outlined in the previous section, we converted numbers of farmers in age and experience brackets to the proportions of farmers falling into these categories. These proportions are still likely to have a positive bias for the 2017 data (due to changes in counting described above), and therefore our estimates of change should be regarded as conservative. The same caution applies to average age, for which no similar adjustment could be made. The magnitude of increase in farmer age and of decrease in the share of new farmers is likely greater in reality than can be shown with publicly available COA data.

For age and experience variables and farmland value per acre, we calculated the distribution and change from 1978, 1997, and 2017. We assessed change at two levels: (1) nationally, for counties in the 48 contiguous states (N = 3,068) and (2) rural (nonmetro) counties in the Midwest Region (N = 539) (Table 1). For the purpose of this study, the Midwest included Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio, and Wisconsin. Within these states, we also assessed the association between consolidation and other variables of interest. We selected rural counties to focus on strongly agricultural areas and to facilitate comparison by avoiding the impact of urban centers on land markets and land transfer dynamics. As metro status for some counties changes over time, we used nonmetro designations from 1993, which is close to the halfway point of our timeframe, in order to ensure a consistent set of counties at each timestep (Parker 2004). For these counties, we calculated the change in consolidation (as the percent of farmland held in farms 1,000 acres in size or larger) between 1978 and 2017, and we split the counties into two equal-sized groups at the median value (33 percent): slower consolidation (N = 270; mean change in consolidation = 18 percent; standard deviation = 12 percent) and faster consolidation (N = 269; mean change in consolidation = 46 percent; standard deviation = 9 percent). We then compared the average rates of change for age, experience, and farmland value across the slower and faster consolidation counties and tested for statistical significance with a t-test.

Table 1. Number of Counties in Sample and Subsets

Range	Subset	Number
National	48 Contiguous States	3,068
Midwest	All Nonmetro	539
	Faster Consolidation	269
	Slower Consolidation	270

Note(s): We based national statistics on counties (in all states except Alaska and Hawaii) that were present in all years in the sample. For the Midwest, we selected rural counties (based on 1993 metro/nonmetro designations) in order to focus on strongly agricultural areas and to facilitate comparison of similar counties, thereby avoiding the impact of urban centers on land markets. We split Midwest counties into groups by the level of consolidation (change in percent of farmland held in farms 1,000 acres in size or larger) experienced between 1978 and 2017 (33 percent). We treated counties for which values for given variables are suppressed in the COA data as missing for that variable and excluded them from calculations. We treated counties for which values for given variables were suppressed in the COA data as missing and excluded them from affected calculations.
SOURCE: Haines, Fishback, and Rhode 2014; USDA NASS.

IMPLICATIONS FOR BLACK FARMERS

In order to better understand the implications of consolidation for Black farmers, we examined the relationship between the rate of farmland consolidation and the change in states' ranks by proportion of Black farmers between 1978 and 2017. We tested for statistical significance using linear regression, analysis of variance, and a t-test (detailed below).

RESULTS

NATIONAL AND REGIONAL GROWTH AND CONTRACTION ACROSS FARM SIZE CLASSES

Overall, farmland acreage declined 13 percent between 1978 and 2017. Despite the overall contraction, harvested acreage on large farms nearly doubled in size and grew by over 105 million acres, an area larger than all of California (single-year values in Table 2; change over time in Table 3). At the same time, the actual number of large crop farms decreased by 544, showing that consolidation continued among the largest farms. Midsize crop farms decreased by about half, in both number and acreage—losing more than 96 million acres (an area larger than Montana) and more than 690,000 farms. The number of small crop farms increased by nearly 37,000—but we do not know how much of this increase is due to increasing efforts to count small farms in the COA. Even as the number of small crop farms increased, small crop farm acreage decreased by more than 200,000 acres. In short, large crop farms are getting larger, small crop farms are getting smaller, and midsize crop farms are disappearing.

Consolidation is most intense for cropland, but the hollowing out of agriculture is pervasive across farming types. When considering all farmland (including cropland, pasture, and all other farmland), acreage in large farms grew by only 10 percent. At the same time, the acreage in midsize farms declined by nearly 40 percent, representing a loss of over 155 million acres—an area larger than California and Idaho combined.

In the Midwest, the shift of acreage into large farms was even more profound. In rural counties, despite an overall contraction of farmland by 6 percent, harvested cropland in large farms more than quintupled, growing by more than 450 percent and more than 42 million acres. The number of large crop farms grew by 140 percent. As similarly occurred in the rest of the country, around half of midsize crop farms and acreage was lost—a decline of almost 230,000 farms and 35 million acres. Looking beyond crop farms to all farms and farmland, acreage in large farms more than quadrupled while the number of large farms increased by 140 percent. Following a pattern similar to crop farms, 46 percent of all midsize farm acreage and 45 percent of all midsize farms were lost.

AGE AND EXPERIENCE

Between 1978 and 2017, the proportion of new farmers across the country (those with less than five years of experience) fell from 18 to 13 percent. The average age of farmers increased from 51 to 59 years, while the proportion of farmers under the age of 35 fell from 15 to 5 percent.

Changes in the Midwest were similar to the rest of the country but slightly greater in amplitude. The proportion of new farmers fell from 16 to 11 percent. The average age of farmers increased from 49 to 59 years, while the proportion of farmers under 35 fell from 18 to 6 percent.

Table 2. Summary of Farmland Variables by Year

Variable Group	Unit/ Group	1978		1997		2017	
		Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Farmland Consolidation (% of Land in Farms > 999 Acres)	All Farmland	31	33	36	29	45	30
	Cropland	27	28	38	28	48	31
Farmland Value	\$ per Acre	2,916	6,618	2,656	8,461	4,855	11,844
Number of Farms	Small (1 to 49 Acres)	175	238	238	319	277	342
	Midsize (50 to 999 Acres)	506	388	424	324	330	258
	Large (> 1,000 Acres)	52	75	58	71	56	63
Farm Acreage	Small (1 to 49 Acres)	3,723	4,627	4,803	5,389	5,164	5,408
	Midsize (50 to 999 Acres)	130,506	102,932	104,881	80,170	79,181	61,470
	Large (> 1,000 Acres)	188,793	434,278	194,493	380,413	205,888	370,598
Farmer Age	Year	51	2	54	2	59	2
	% Younger than 35	15	5	9	4	5	3
Farmer Experience	Years Experience	17	2	20	3	22	3
	% with <5 Years Experience	18	5	14	5	13	5

Note: Mean and standard deviation of county-level values, by year, for 3,068 counties in the 48 contiguous states.

SOURCE: Haines, Fishback, and Rhode 2014; USDA NASS.

Table 3. Summary of Change in Farmland Variables by Interval

Variable Group	Unit/Group	1978 to 1997		1997 to 2017		1978 to 2017	
		Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Farmland Consolidation (% of Land in Farms > 999 Acres)	All Farmland	21	80	56	156	78	164
	Cropland	55	116	46	94	125	247
Farmland Value	\$ per Acre	-11	40	108	82	71	67
Number of Farms	Small (1 to 49 Acres)	51	83	30	102	103	242
	Midsize (50 to 999 Acres)	-9	33	-19	33	-23	57
	Large (> 1,000 Acres)	42	98	18	83	70	167
Farm Acreage	Small (1 to 49 Acres)	55	121	25	121	100	384
	Midsize (50 to 999 Acres)	-13	34	-20	46	-28	68
	Large (> 1,000 Acres)	27	83	50	494	65	151
Farmer Age	Year	7	4	8	4	16	5
	% Younger than 35	-35	33	-35	42	-62	23
Farmer Experience	Years Experience	17	14	10	15	28	17
	% with <5 Years Experience	-22	27	-1	44	-27	31

Note(s): Mean and standard deviation of percent change for county-level values, by year, for 3,068 counties in the 48 contiguous states.

SOURCE: Haines, Fishback, and Rhode 2014; USDA NASS.

Within the Midwest, our analysis shows a strong and statistically significant association between consolidation and barriers to new farmers ($p < 0.005$ for each of four variables below; summary in Table 4; statistical tests in Table 5). In the counties experiencing faster consolidation (compared to those experiencing slower consolidation), we found the following:

- The share of new farmers declined 56 percent faster.
- Average years of experience increased 34 percent faster.
- Average farmer age rose 26 percent faster.
- The share of younger farmers fell 8 percent faster.

Table 4. Faster and Slower Consolidation in the Rural Midwest and New Farmers—Summary

Interval	Variable	Consolidation Group	% Change	
			Mean	Standard Deviation
Single Interval				
1978 to 2017	Years Experience	Faster	39.3	12.0
		Slower	29.5	15.5
	% of New Farmers, <5 Years Experience	Faster	-37.0	19.9
		Slower	-23.8	46.8
	Farmer Age	Faster	20.2	4.3
		Slower	16.1	5.5
	% Young Farmers, <35	Faster	-68.7	9.6
		Slower	-63.6	16.7
Split Intervals				
1978 to 1997	Farmland, \$ per Acre	Faster	-39.4	14.3
		Slower	-18.0	31.0
1997 to 2017	Farmland, \$ per Acre	Faster	161.1	49.3
		Slower	133.4	58.8

Note(s): All variables are means of county-level percent change for 539 rural counties in Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio, and Wisconsin. We split counties into two groups at the median value of change in consolidation from 1978 to 2017 (33 percent). For farmland value, we split data into two intervals to account for opposite trends in the first and second periods.

SOURCE: Haines, Fishback, and Rhode 2014; USDA NASS.

Table 5. Faster and Slower Consolidation in the Rural Midwest and New Farmers—Statistical Tests

Interval	Variable	Statistic	df	P Value
Single Interval				
1978 to 2017	Years Experience (Current Farm)	8.3	506.2	< 0.0005
	% of New Farmers, <5 Years Experience	-4.2	351.8	< 0.0005
	Farmer Age	9.8	509.4	< 0.0005
	% Young Farmers, <35	-4.4	421.8	< 0.0005
Split Intervals				
1978 to 1997	Farmland, \$ per Acre	-10.3	379.3	< 0.0005
1997 to 2017	Farmland, \$ per Acre	5.9	521.8	< 0.0005

Note(s): Results of t-tests for differences between rates of change (percent change) of variables across slower and faster consolidation counties in the Midwest. We split nonmetro counties in Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio, and Wisconsin (N = 539) into two groups at the median value of change in consolidation between 1978 to 2017 (33 percent). For farmland value, we split data into two intervals to account for opposite trends in the first and second periods.
SOURCE: Haines, Fishback, and Rhode 2014; USDA NASS.

FARMLAND VALUE

Between 1978 and 2017, the cost of farmland rose an average 67 percent nationally (after adjusting for inflation). However, the farm crisis of the 1980s was associated with a crash in farmland value, and averaging over the full duration of our sample obscures very different dynamics in the first and second periods, that is, before and after 1997 (Lamm 1997). Between 1978 and 1997, farmland value fell 9 percent, only to rise 83 percent between 1997 and 2017.

The Midwest saw changes of greater magnitude. Farmland value fell 36 percent between 1978 and 1997 and then climbed 143 percent between 1997 and 2017. Looking within the Midwest, our analysis shows strong and contrary associations between consolidation and farmland value in the first and second periods of our sample (each statistically significant at $p < 0.005$). Between 1978 and 1997, farmland value in rapidly consolidating counties experienced a harder crash, declining 118 percent faster than in counties experiencing slower consolidation. Between 1997 and 2017, farmland value rose 21 percent faster in counties experiencing faster consolidation.

BLACK FARMERS AND FARMLAND CONSOLIDATION (1978 TO 2017)

Our analysis found that farmland consolidation is associated with disproportionate impacts on Black farmers (Tables 6 and 7). In examining the ranking of states by proportion of Black farmers, the states that experienced less farmland consolidation tended to rise in rank, while the states that experienced more consolidation tended to drop. We tested this relationship in several ways: (1) at the national level, with a linear model, and (2) using only the 16 states with the highest number of Black farmers in 2017 (as below), using a linear model, a t-test, and analysis of variance.

At the national level, a linear model of change in rank of proportion of Black farmers regressed against change in farmland consolidation was significant ($p = 0.027$). Black farmers, however, are not evenly distributed across the lower 48 states, and the inclusion of states with very few Black farmers may introduce needless noise into the model. In fact, just 16 states account for 95 percent of the nation's Black farmers (in descending order, Texas, Mississippi, Alabama, Louisiana, Georgia, South Carolina, Florida, North Carolina, Virginia, Oklahoma, Arkansas, Tennessee, Kentucky, California, Michigan, and Maryland). We assessed the relationship between rank of proportion of Black farmers and consolidation in several ways within these 16 states: via a linear model (as above); with a t-test of changing rank against a median split of the states by change in consolidation; and by analysis of variance of changing rank against the states divided into quartiles by change in consolidation. Our finding of significance was robust across all three tests: linear model ($p = 0.028$); t-test ($p = 0.033$); and analysis of variance ($p = 0.046$).

When we divided those states into two groups according to the level of farmland consolidation (split at the median), we found that the eight states that experienced less consolidation rose an aggregate five places in rank (mean = 0.63), while the eight states that experienced the most consolidation dropped an aggregate 25 places (mean = -3.12). When divided into four groups (split at quartiles), the four states experiencing the least consolidation rose an aggregate four places (mean = 1), and the four states that experienced the most consolidation fell an aggregate 21 places (mean = -5.25).

Table 6. Black Farmers and Farmland Consolidation in 1978 and 2017

State	1978				2017			
	Black Farmers			Farmland Consolidation	Black Farmers			Farmland Consolidation
	Number	% of All	Rank by %		Number	% of All	Rank by %	
South Carolina	3,760	14.1	1	33.3	1,789	7.2	3	41.6
Mississippi	4,971	11.3	2	41.5	4,834	13.8	1	48.2
North Carolina	5,776	7.1	3	11.9	1,401	3.0	8	41.2
Alabama	3,114	6.1	4	33.3	2,885	7.1	4	37.8
Louisiana	1,907	6.1	5	43.6	2,167	7.9	2	60.1
Virginia	3,023	6.1	6	15.1	1,207	2.8	9	29.0
Georgia	2,438	4.7	7	31.7	1,878	4.4	5	43.6
Maryland	550	3.5	8	11.9	155	1.2	15	36.7
Arkansas	1,487	2.9	9	35.3	1,003	2.4	10	50.2
Florida	945	2.7	10	67.5	1,493	3.1	6	58.0
Tennessee	1,672	1.9	11	13.0	927	1.3	14	28.3
Texas	2,934	1.7	12	72.5	7,753	3.1	7	71.2
Oklahoma	703	1.0	13	51.2	1,175	1.5	13	58.1
Kentucky	928	0.9	14	7.3	385	0.5	20	26.9
California	291	0.4	17	77.6	256	0.4	22	71.7
Michigan	147	0.2	18	7.0	196	0.4	21	41.7

Note(s): Due to changes in methods at the USDA, comparison of absolute numbers of Black farmers over time is not reliable. We therefore calculate the percent of Black farmers among all farmers in each state (“% of All”), and then rank states according to their percent of Black farmers. The states included are the top 16 states by number of Black farmers reported in the 2017 COA. “Farmland Consolidation” refers to the percent of state farmland held in farms 1,000 acres in size or larger.

SOURCE: Haines, Fishback, and Rhode 2014; USDA NASS.

Table 7. Changes in Percent of Black Farmers, State Rank, and Farmland Consolidation, 1978 to 2017

State	Black Farmers		Farmland Consolidation
	% of All	Rank by %	
Mississippi	2.5	-1	6.8
Louisiana	1.8	-3	16.5
Texas	1.4	-5	-1.3
Alabama	1.0	0	4.6
Oklahoma	0.5	0	6.9
Florida	0.4	-4	-9.5
Michigan	0.2	3	34.6
California	0.0	5	-5.9
Georgia	-0.3	-2	11.9
Kentucky	-0.4	6	19.6
Arkansas	-0.5	1	14.9
Tennessee	-0.6	3	15.2
Maryland	-2.3	7	24.8
Virginia	-3.3	3	13.9
North Carolina	-4.1	5	29.3
South Carolina	-6.9	2	8.3

Note(s): Figures represent the difference between 1978 and 2017 for the percent of Black farmers out of all farmers in the state, the rank of that state by percent of Black farmers, and farmland consolidation. "Farmland Consolidation" refers to the percent of farmland in farms of 1,000 acres in size or larger. SOURCE: Haines, Fishback, and Rhode 2014; USDA NASS.

Reversing Farmland Consolidation Should Be a Policy Priority

Our analysis shows that over the last four decades, barriers to new farmers grew and their growth was amplified in areas where consolidation increased the fastest. Nationwide, the proportion of new farmers is falling, the cost of farmland is increasing, and farmers are getting older. Looking at the Midwest, we found statistically significant differences showing that each of our age and experience indicators worsened further and faster in the counties experiencing

faster consolidation compared to the rest of the region. Similarly, we found statistically significant differences showing that farmland value in the Midwest crashed harder between 1978 and 1997 and climbed faster between 1997 and 2017 in the counties experiencing faster consolidation compared to the rest of the region.

Our analysis also shows associations between farmland consolidation and disproportionate impacts on Black farmers. Because changes in data gathering and tabulation at the USDA make direct comparison across years uninformative, we ranked states within each year by the proportion of Black farmers out of all farmers in each state. We found statistically significant trends (1978 to 2017) showing that states experiencing more farmland consolidation tended to fall in the ranks, while states experiencing less consolidation tended to rise.

RECOMMENDATIONS

The drivers of consolidation are complex, and piecemeal interventions that attempt to ameliorate consequences while failing to address underlying drivers are unlikely to stem the tide—much less accomplish the reversal needed to foster the revitalization of rural communities. Improving land access is critical, but it is just a part of the puzzle. Substantive change will also require actions to change the playing field on which midsize and smaller farms compete and intervention to change the financial incentives that make scaling up desirable. The full range of actions needed is beyond the scope of this report, but we offer here near-term options that build on existing policies and proposals. There are multiple existing policy mechanisms that address a subset of the issues named above; they can serve as jumping off points for expansion or as models for new and improved programs.

To slow and reverse farmland consolidation, support the next generation of farmers, rebuild the rural economy, and help repair the harm done to Black farmers by a century of land theft, UCS recommends that Congress, the USDA, and other relevant policymakers take the following steps:

- Create a national initiative to assess, integrate, and scale up farmland transition programs to support the next generation of farmers. This effort should prioritize the participation of three overlapping priority groups: small-to-midsize farms; farmers who are Black, Indigenous, or other people of color (BIPOC); and cooperatives and land trusts. The following actions should be included in this initiative:
 - Establish capital gains incentives for the sale of farmland to these priority groups.
 - Establish (or expand) public land trusts to purchase land from retiring farmers to be transferred or sold interest-free to priority groups.
 - Support the expansion of trusts, easements, and other cooperative ownership structures, which can support land access for new farmers while also de-commodifying land and protecting it from future speculative acquisition.
 - Expand the Buy-Protect-Sell program in the Agricultural Conservation Easement Program, which allows land trusts to purchase land, protect it with an easement, and then sell it to a farmer at its agricultural value.

- Conduct a national assessment and discussion of land markets, including federal and state laws and regulations, to quantify the impacts of the current system and identify needs and opportunities for reform. The results of the assessment and discussion should be captured in a detailed and publicly available report.
- Conduct a comprehensive assessment of historical and current federal policies related to market reforms and commodity pricing mechanisms, identifying and reporting on strategies that enable farmers to cover their basic costs of production while deterring overproduction trends that drive down the prices that farmers receive for their products. The results of the assessment should be captured in a detailed and publicly available report.
- In tandem with the national initiative on farmland transition, expand funding of the Farming Opportunities Training and Outreach Program.
- Redress the harm inflicted on BIPOC farmers by the past centuries of discrimination by enacting legislation offering solutions to end discrimination against all BIPOC farmers and proactively repair the damage that has been done. For example, the Justice for Black Farmers Act offers a broad set of solutions for working toward this end.
- Work with tribal leaders, farmers, and community members, to develop additional legislative proposals to support Native farmers and communities, including by addressing the obstacles created by imposed systems of land tenure and expropriative land policies. All initiatives to support land access should integrate the needs and perspectives of the communities that represent the original inhabitants of this land, on whose dispossession this country still rests.
- Immediately fund provisions included in the 2018 Farm Bill intended to support owners of heirs' property and direct the USDA to prioritize implementation. These provisions include granting access to disaster aid programs for owners of heirs' property and providing loans for owners to clear their title.
- Expand the number of items included in the NASS's data tables (such as the Primary Producer tables used in this study) that facilitate comparison across years of methodological changes. Additionally, expand data tables describing the magnitude of adjustments for coverage, nonresponse, and misclassification (such as are published in PDF form in the methodological appendices of the COA), to include adjustment information for more data items, and make these adjustment tables easily accessible to researchers and the broader public through the QuickStats portal.

Conclusion

An agriculture system that hollows out rural communities, limits opportunities for Black farmers, and creates barriers to the next generation of farmers is neither desirable nor sufficient to stand up to the environmental, economic, and social crises we face. Our analysis points to ways that farmland consolidation works against our needs and our goals for a food system that will weather the storm. Rural communities deserve equitable access to the farmland and farm livelihoods that are the historic foundation of rural prosperity and

wellbeing. A century of dispossession of Black farmers must be reversed, and the long-term economic harm to the Black community inflicted by this dispossession must be repaired. We can act now to support new farmers and reverse the dispossession of Black farmers while we continue working to better understand the barriers they face and the solutions we need.

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