



INTRODUCTION

Brief#1: Census of Agriculture Project

August 2026

What is the Census of Agriculture?

The [Census of Agriculture](#) is a comprehensive survey of United States farming that has delivered uniform, impartial data for every county in the nation since 1840.^{1,2} Although originally intertwined with the population census, it has since evolved into a survey that is conducted every five years. The survey focuses on operations that produce or sell at least \$1,000 worth of agricultural products and examines land ownership, operator traits, production practices, income, expenditures, and much more.^{3,4}

The Census of Agriculture is an important tool for gaining insight into the current state of U.S. agriculture and monitoring trends over time. It provides essential data that help farmers and ranchers make informed decisions about the future of their own operations. It is also used by policymakers, government agencies, and local authorities to develop policies and programs and allocate resources aimed at improving the health, growth, and competitiveness of rural communities and U.S. agriculture.²

However, the Census of Agriculture is not without limitations, and concerns have been raised about how it defines and counts farms and farmers. For instance, including lifestyle and residential farms alongside full-time commercial operations can inflate overall farm numbers and mask the scale of consolidation within the sector.⁵ The Census of Agriculture also provides limited insight into farmworkers, as it focuses primarily on farm operators; the labor data it does collect is reported by operators rather than by farmworkers themselves, which can obscure the experiences and working conditions of agricultural labor.⁵ In addition, it does not consistently capture sufficient detail on beginning and socially disadvantaged farmers, groups that could benefit most from targeted federal policies, safety nets, and technical support.⁵ Declining response rates have also raised concerns about data quality, with survey participation falling from 72% in 2017 to 61% in 2022.⁶ Despite these gaps, the Census remains one of the most valuable tools for understanding broad, long-term trends in U.S. agriculture.

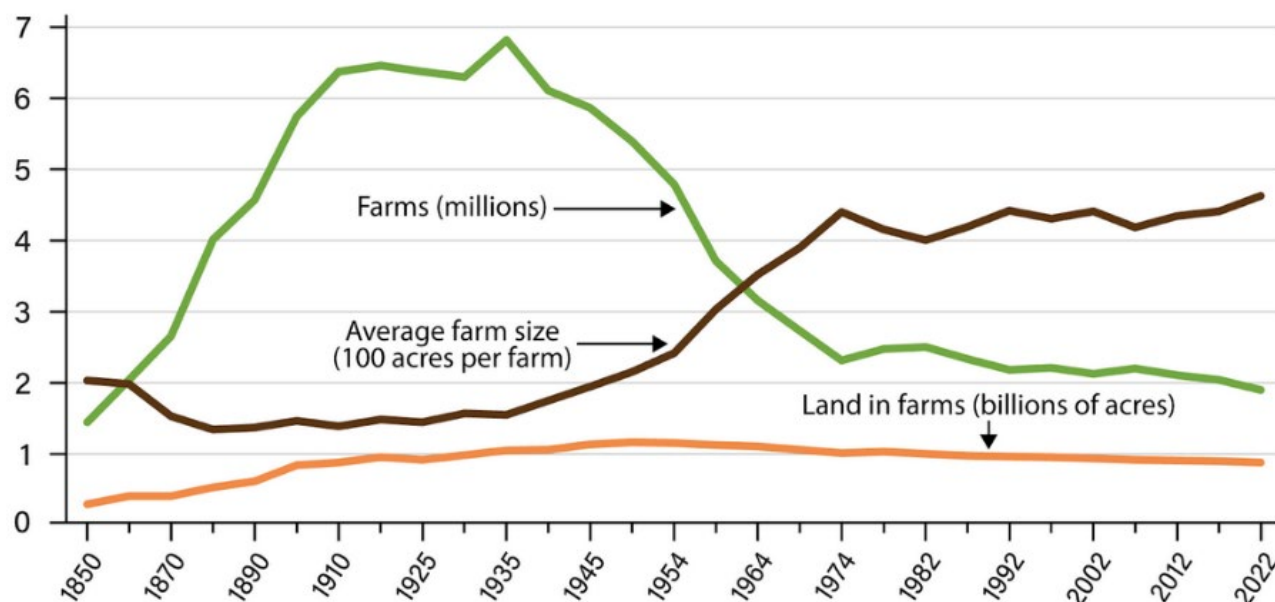
Key Findings from the 2022 Census of Agriculture

When the results of the latest Census were released in February 2024, Secretary of Agriculture Tom Vilsack called the survey “a wake-up call,” as the number of farms in the U.S. had decreased by 7% since the 2017 Census, a loss of approximately 142,000 farms in five years. The results also showed a 2% decrease in total acres of land in farms, a loss of approximately 20,000,000 acres of farmland.⁷

As the U.S. Department of Agriculture Economic Research Service reports, these declines in farms and farmland are part of a longer-term trend.⁸ Still, the most recent Census indicates some concerning milestones. The number of farms fell below 2 million for the first time in over 150 years, and the amount of land in farms fell below 900,000,000 acres for the first time in roughly a century.

Farms, land in farms, and average acres per farm, 1850–2022

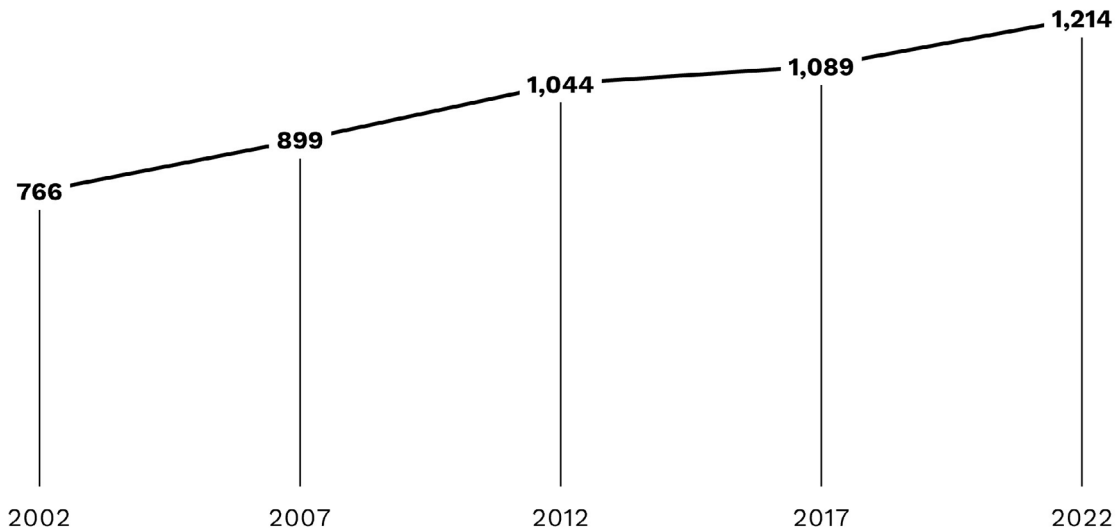
USDA Economic Research Service
U.S. DEPARTMENT OF AGRICULTURE



While we have seen a striking decline in farms and land in farms, the average farm size in the U.S. has been increasing over time. Since 2017, the average farm size increased by 5% to 463 acres. This trend toward larger, fewer farms, known as farmland consolidation, has been linked to several negative consequences. It creates barriers for new farmers, undermines the historical foundation of rural economies, and drives the depopulation of rural communities.⁹ Farm size growth is also associated with landscape simplification, in which large-scale monocultures require more fertilizers and pesticides, degrading soil health and increasing vulnerability to erosion and climate impacts.¹⁰

Inventory numbers from the 2022 Census show a similar trend for livestock and poultry farms. The average number of animals being raised per farm continues to increase over time. The inventory of hogs and pigs, for example, increased by 2% and the number of farms with inventory decreased by 8% between 2017 and 2022. But the average inventory per farm increased by 11%, continuing an upward trend over the past two decades.

Average Inventory of Hogs and Pigs per Farm



This trend toward raising more animals per farm has consequences as well. As the landmark report *Putting Meat on the Table: Industrial Farm Animal Production in America* states, the move towards large, intensive operations where animals are housed in large numbers has come at a cost to the environment and had negative impacts on public health, rural communities, and the health and well-being of the animals.¹¹



The Census of Agriculture Project

After announcing that the 2022 Census of Agriculture results were a “wake-up call,” Secretary Vilsack asked, “whether as a country we are okay with losing that many farms and okay with losing that much farmland? Or is there a better way?”

Through the Census of Agriculture Project, the [Johns Hopkins Center for a Livable Future](#) (CLF) aims to answer that question with a series of briefs that provide insights into initiatives and policies that imagine a better way.

In 2002, the CLF published an article titled “How Sustainable Agriculture Can Address the Environmental and Human Health Harms of Industrial Agriculture,”¹² which highlighted many problems with mainstream farming models, including:

- Pollution from large, intensive agricultural operations is harming the health of both workers and residents living downstream or downwind from these operations.
- Synthetic chemical pesticides and fertilizers are polluting soil, water, and air, harming both the environment and human health.
- Soil is eroding much faster than it can be replenished, taking with it the land’s fertility and nutrients that nourish both plants and those who eat them.

Twenty years later, the 2022 Census results indicate that this agricultural model has only become more entrenched. More recent estimates from the U.S. Department of Agriculture suggest that the trends identified in the Census, including fewer farms, less farmland, and larger average farm size, have persisted.¹³ The simple answer to Secretary Vilsack’s question, therefore, is yes—there must be a better way.

While many of the impacts that mainstream farming models have on climate, health, and the environment are better recognized now, there is still significant work to be done to shift toward a model that increases long-term production and profitability while also promoting environmental stewardship and enhancing the quality of life for farmers and rural communities. The series of briefs in this project will use data from the Census of Agriculture to help us better understand different trends in U.S. agriculture and identify opportunities for protecting public health and the environment while also cultivating farmers’ livelihoods and rural economies.

Through this series, we aim to examine initiatives and policies that can mitigate the health and environmental impacts of extractive agricultural production and create positive outcomes for agricultural communities. We will also share policy proposals that align with the four principles that comprise the [CLF Public Health Agenda for Food Systems Change](#):

- Promote transitions to food production methods that support the health of people and the planet
- Align policies on food production and consumption for healthy diets
- Protect food system workers and communities most affected by food production practices
- Expand transparency around food system practices and their impacts

What's Next?

The U.S. has experienced continued losses in both farms and land in farms. Over time, we have also seen a shift toward larger and fewer farms that prioritize mass production of livestock and poultry and a limited range of crops at the expense of public health and the environment. The next two briefs in this series provide a deeper examination of trends in farmland consolidation and geographic concentration in animal agriculture and their implications for public and environmental health. Each brief also introduces potential policy solutions.

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Farmland Consolidation

Brief #2: Census of Agriculture Project

August 2026

Introduction

Farmland consolidation is the process of aggregating agricultural land from multiple smaller farms into fewer, larger farms. This trend is driven in part by technological advancements, economies of scale, and governmental policies.^{1,2}

Farmland consolidation is often viewed as a way to modernize agriculture, but it can also negatively impact rural communities¹ and biodiversity,³ ultimately threatening local ecosystems and the people who rely on them.^{1,4} It can also make it harder for new farmers to access land and for smaller farms to stay competitive.^{5,6}

This brief uses data from the Census of Agriculture to explore trends in United States farmland consolidation, examines the implications, and introduces policies aimed at addressing the public health, ecological, and economic consequences of these trends.

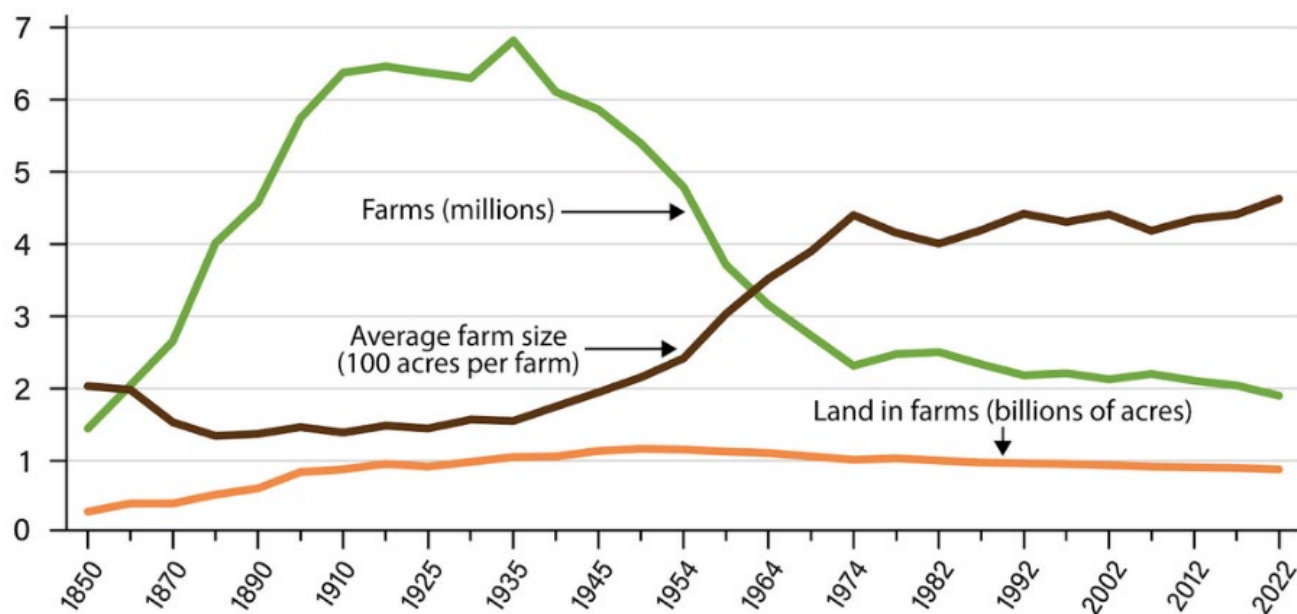


Trends

The U.S. Department of Agriculture (USDA) released the [results of the 2022 Census of Agriculture](#) in February 2024. The results provide both a view of the current state of agriculture in the U.S. and insights into short and long-term trends. Census data show that the decades-long trend toward farmland consolidation continues apace. As the figure below shows, the number of farms and acreage of land in farms have declined over time while the average farm size has been increasing.

Farms, land in farms, and average acres per farm, 1850-2022

USDA Economic Research Service
U.S. DEPARTMENT OF AGRICULTURE

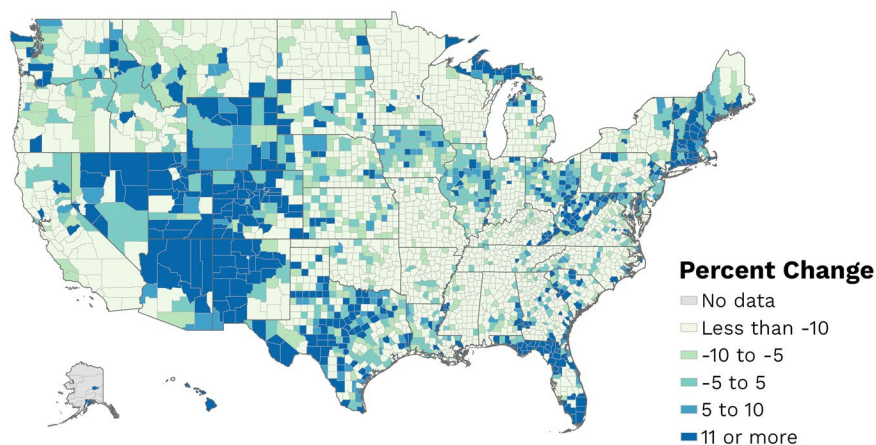


Farms

In 2022, there were 1.9 million farms in the U.S., 7% fewer than in 2017 (the last time the Census of Agriculture was conducted), representing a loss of roughly 142,000 farms in five years. Over the past 20 years the number of U.S. farms declined by 10% percent, representing a loss of 228,495 farms.

The decline in the number of farms, however, has not been uniform across the country. The following map shows that while the majority of the country lost farms, some areas experienced an increase in the number of farms, with the biggest growth occurring in the Southwest and Northeast.

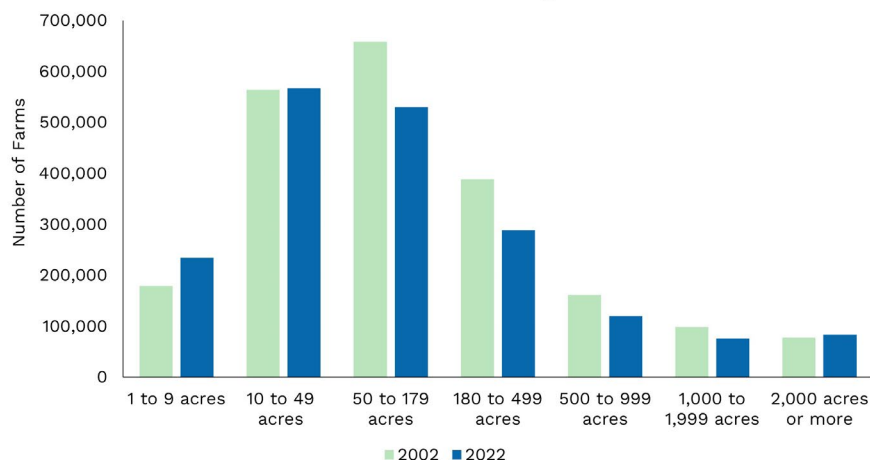
Percent Change in Number of Farms by County 2002-2022



The growth in the number of farms in the Southwest and Northeast regions of the U.S. was driven primarily by increases in small farms, specifically those in the 1–9 acre and 10–49 acre size classes.

The majority of farms that were lost between 2002 and 2022 were mid-sized farms, with the steepest declines occurring in the number of farms in the 50–179 acre and 180–499 acre ranges.

Number of Active Farms by Size Class

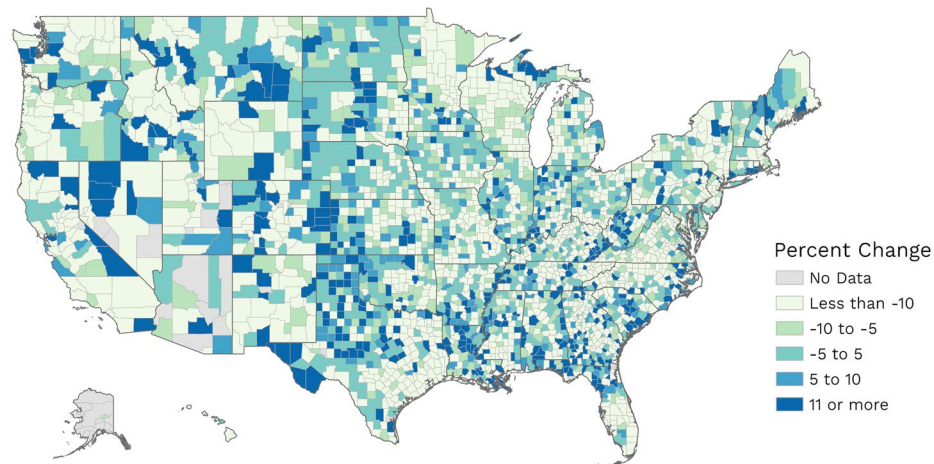


Land in Farms

There was a 2% decrease in total acres of U.S. land in farms between 2017 and 2022, equaling a loss of approximately 20 million acres of farmland.

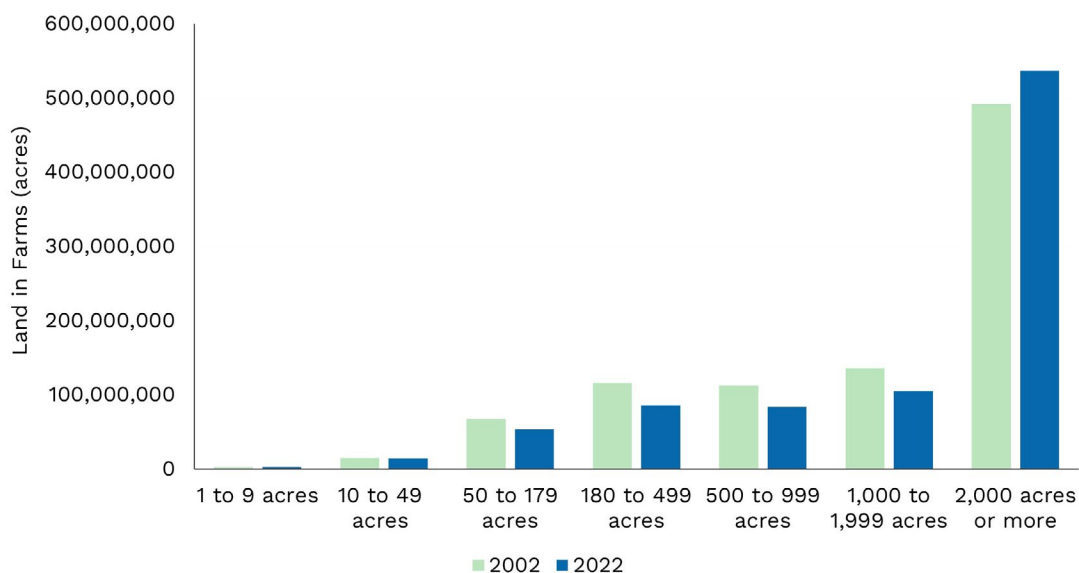
Between 2002 and 2022, there was a 6% decrease in total acres of land in farms, amounting to 60 million acres of farmland lost. The decline in farmland has been linked to factors such as urban development, climate change, energy production, and shifts in demographics and land ownership.⁷ The map below shows areas of growth and loss in land in farms in every state.

Percent Change in Acres of Farmland by County 2002-2022



The majority of U.S. farmland is operated by the largest farms. In 2022, 61% of farmland was in farms with 2,000 acres or more, up from 52% in 2002. The only gains made in land in farms between 2002 and 2022 were by the smallest and largest size classes. All other classes experienced losses.

Acres of Land in Farms by Size Class

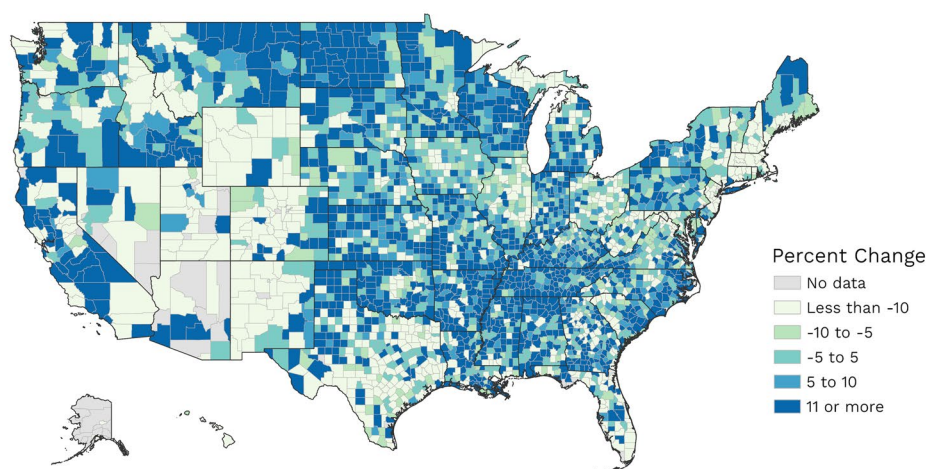


Average Farm Size

While the number of farms and the acreage of farmland continue to decline, the average farm size is on the rise. The average farm size increased by 5% between 2017 and 2022.

The change in average farm size between 2002 and 2022 follows a trend that is the reverse of the change in number of farms. The same areas that saw an increase in the number of farms, such as the Southwest and Northeast, also saw a decrease in average farm size. Meanwhile, areas that saw a decrease in the number of farms saw an increase in average farm size.

Percent Change in Average Farm Size by County 2002-2022



Implications

The ongoing consolidation of U.S. farmland, where fewer, larger farms replace many smaller ones, creates a mix of benefits and challenges. On one hand, it can make farming more efficient and profitable for some. On the other hand, it can harm small farmers, weaken rural communities, and affect the environment. These issues matter even more today, as farmers face the pressure to grow more food for a rising global population while also reducing their impact on climate change, pollution, and soil and water health.^{4,8}

Although globally, smaller farms often produce more food per acre than larger ones, the connection between farm size, profit, and productivity depends on location, markets, and access to technology.³ In the U.S., larger farms can often earn more because they can afford expensive machinery and equipment that save time and labor.^{2,9} They can buy supplies and services at lower prices per acre, and they have easier access to programs like crop insurance.¹ These advantages mean that large farms often make higher profits and get better returns on investment than mid-sized farms.^{2,9}

At the same time, consolidation makes it harder for small farms to compete in the agricultural market. As large farms buy up more land, farmland becomes more expensive, making it harder for new farmers to enter the market or for existing smaller operations to expand.^{5,6} Many government programs and financial supports, such as crop insurance, are also designed for large farms, making it

difficult for smaller or beginning farmers to qualify. As a result, smaller farms face greater financial risks and have fewer safety nets when markets or weather turn against them.^{6,7,10}

The shift toward larger farms also affects rural communities. Small and mid-sized farms have long been central to rural life, providing jobs, supporting local businesses, and building community connections. But as farmland consolidates, rural communities experience job losses and economic decline.^{11,12} Large farms use more automation and have fewer workers, leading many young people to move elsewhere for work.^{11,12} The decline of mid-sized farms, in particular, has been called the “hollowing out” of U.S. agriculture, with studies showing that communities with more mid-sized farms tend to have stronger economies, fairer income distribution, higher civic participation, and closer community ties.¹³

Consolidation also adversely affects biodiversity, with downstream implications for human health and welfare. Larger farms tend to grow only a few crops, such as corn or soybeans, or raise cattle,² while smaller farms often grow a mix of crops and are surrounded by forests or wetlands that support wildlife.³ These more varied landscapes help maintain soil health, clean water, and natural pest control. In contrast, large-scale monocultures, where a single crop is grown repeatedly, can degrade soil, reduce water quality, harm habitats, and make ecosystems more vulnerable to pests and diseases.⁴

As the trend of US farmland consolidation continues, thoughtful policies are needed to support small and mid-sized farmers while also protecting the environmental benefits provided by biodiverse landscapes. The challenge is to ensure that short-term gains in efficiency do not come at the expense of rural communities and the land and ecosystems that sustain them.

Policy Proposals

The Farm Bill, a crucial piece of legislation typically considered every five years, sets the nation’s agriculture and food policy, influencing public health, food systems, and agricultural practices across the country. That legislation provides a critical opportunity to address farmland conservation, farm loss, and agricultural sustainability. However, the Farm Bill is not the only opportunity to make change—progress can also be achieved in other ways, including by passing separate federal legislation, leveraging USDA authorities, and implementing state and local policies.

The first brief in this series introduced the four principles of the [CLF Public Health Agenda for Food Systems Change](#). Three of these principles are used below to illustrate proposed policy solutions that address issues discussed in this brief.

- Promote transitions to food production methods that support the health of people and the planet
- Protect food system workers and communities most affected by food production practices
- Expand transparency around food system practices and their impacts

See the next page for a few examples of proposals to address the problems discussed in this brief. This list is not exhaustive and is mostly focused on the federal level.

PROMOTE TRANSITIONS TO FOOD PRODUCTION METHODS THAT SUPPORT THE HEALTH OF PEOPLE AND THE PLANET

The existing U.S. agricultural subsidy structure disproportionately benefits large, high-income farms at the expense of small and mid-sized farms. Introducing income caps for eligibility and better targeting of insurance subsidies would help protect the livelihoods of small, beginning, and socially disadvantaged farmers.^{14,15}

Examples of proposals to support small and mid-sized farms:

- [Assisting Family Farmers through Insurance Reform Measures \(AFFIRM\) Act](#)
 - Legislation that would reform the federal crop insurance program to reduce spending and make crop insurance more accessible and affordable, particularly for smaller farms.
- [Insuring Fairness for Family Farmers Act](#)
 - Legislation that would reform federal crop insurance subsidies and incentivize crop insurance agents to cover small and specialty crop farms.
- [Save Our Small \(SOS\) Farms Act](#)
 - Legislation that would increase the number of farms eligible for crop insurance, reduce coverage costs for small farmers, and instruct the USDA to create more flexible insurance options to assist farmers during extreme weather events.
- [Whole Farm Revenue Protection Program Improvement Act](#)
 - Legislation that would expand access to the Whole Farm Revenue Protection program, particularly to small and diversified farms, providing a safety net that can help them better weather economic and environmental challenges.

Increased consolidation continues to strip small, beginning, and socially disadvantaged producers of market access and opportunities. Restricting corporate investors from owning or leasing future farmland and expanding infrastructure to help smaller, independent producers access markets can help ensure fair competition against industrial agribusinesses.¹⁵ Another important opportunity is leveraging the purchasing power of public institutions via values-aligned food procurement policies.¹⁶ Such policies seek to promote more just, healthy, resilient, and sustainable food systems by prioritizing these core values in food purchasing and food service operations.¹⁷

Examples of proposals to improve market access and opportunities at the federal and state level include:

- Federal
 - [Capital for Beginning Farmers and Ranchers Act](#)
 - Legislation that would create a multi-year loan pilot program to assist beginning farmers and ranchers.
 - [Next Generation Farmer Act](#)
 - Legislation that would expand access to USDA Farm Ownership Loans for beginning farmers.
 - [Agriculture Skills Preparation for Industry Recruitment Efforts \(ASPIRE\) Act](#)
 - Legislation that would establish an agriculture workforce training program within USDA's existing Beginning Farmer and Rancher Development Program, support schools in strengthening workforce training and retention, and support apprenticeships, internships, and partnerships with local agriculture businesses.

- EAT Local Foods Act
 - Legislation that would create a permanent grant program for state and tribal governments to procure and distribute locally grown food.
- EFFECTIVE Food Procurement Act
 - Legislation that would require the USDA to set targets for purchasing sustainable and equitably sourced products and would set aside funding for a pilot program to create a values-aligned purchasing process, enhancing market access for small-scale and underserved producers.
- Local Farmers Feeding Our Communities Act
 - Legislation that seeks to boost local procurement through cooperative agreements connecting local farmers and producers with local food distribution organizations. The act would set aside funding for purchases from small, mid-size, beginning, and veteran farmers.
- Strengthening Local Food Security Act
 - Legislation that seeks to increase local and regional procurement for food banks and schools, with a focus on small, beginning, and underserved farmers, ranchers, and fishers.
- Local Procurement Act
 - Legislation that seeks to boost USDA's local and domestically grown food purchasing and increase marketing opportunities for small and mid-sized farms.
- Farmland for Farmers Act
 - Legislation that would restrict corporate farmland investment and consolidation, increase transparency in land ownership, and ensure fair access to farm programs.
- Fair Credit for Farmers Act
 - Legislation that seeks to improve access to credit for farmers and addresses disparities in lending practices.
- Increasing Land Access, Security and Opportunities Act
 - This bill aims to expand access to land, markets, and capital for small, beginning, and socially disadvantaged farmers.
 - (RELATED UPDATE): USDA terminated the Increasing Land, Capital, and Market Access (ILCMA) program in March 2026, canceling \$300 million in contracts. USDA stated that many of the program's projects did not effectively improve land access and cited concerns over spending and equity-related criteria.
- Justice for Black Farmers Act
 - This legislation aims to end discrimination in federal agriculture policies that have contributed to the loss of land, limited access to resources, and unfair treatment of Black farmers.
- Office of Small Farms Establishment Act
 - This legislation would create an Office of Small Farms at the USDA, which would focus on the needs and challenges of small farms and ensure they remain competitive and sustainable.
- Empowering Women in Agriculture Act
 - Legislation that would include women in the definition of socially disadvantaged farmers and ranchers and enhance access to funding, resources, and opportunities for organizations serving disadvantaged farmers.

- State
 - Illinois:
 - Farmer Equity/Innovation Act
 - Legislation that would create a Farmer Equity and Innovation Center at the University of Illinois, establishing a statewide program to support small and mid-sized farms.
 - Food Infrastructure Grant Act
 - Enacted legislation that requires the Department of Agriculture to create and manage a Local Food Infrastructure Grant Program to enhance local food processing, aggregation, and distribution through the award of annual grants.
 - Small Farmers Restoration Program
 - Legislation that would establish a program to support socially disadvantaged and limited-resource farmers by providing grants for agricultural conservation easements, technical assistance, and training.
 - New York
 - Good Food New York Act
 - Legislation that would allow food purchasing contracts to be awarded to qualified bidders who meet specific values-based standards, provided their bid is not 10% higher than the lowest bid.
 - Hawaii
 - Hawaii Right to Farm Act
 - Legislation that would redefine which agricultural actors qualify for right-to-farm protections, explicitly excluding Concentrated Animal Feeding Operations (CAFOs) and businesses with opaque ownership. It would also protect Native Hawaiian subsistence farmers from nuisance claims and require corporate or limited-liability farm entities to publicly disclose their ownership and management structures.
 - California
 - Farmland Access and Conservation for Thriving Communities Act
 - Legislation that would establish a program for financial and technical assistance for agricultural land acquisition and protection. Priority funding will be directed toward activities that benefit socially disadvantaged farmers and ranchers, particularly those operating on smaller farms or ranches.

PROTECT FOOD SYSTEM WORKERS AND COMMUNITIES MOST AFFECTED BY FOOD PRODUCTION PRACTICES

Consolidation in agriculture also impacts workers in the food system and the communities where production takes place. Many farmworkers are not protected by existing labor and occupational safety standards, and lax enforcement fails to protect many other workers in the food system. The widespread reliance of undocumented workers throughout the food system creates more opportunities for exploitation and dangerous conditions for workers who do not feel empowered to report violations for fear of immigration enforcement. There are many changes needed to address impacts on workers in the food system, ranging from policies on overtime and minimum wage issues, child labor rules, heat protection, occupational safety and ergonomic issues, pesticide exposure, and labor contracting.

Examples of proposals to strengthen protections for workers in the food system include:

- Federal
 - [Asuncion Valdivia Heat Illness, Injury, and Fatality Prevention Act](#)
 - Legislation designed to protect workers, particularly those in outdoor agricultural and construction industries, from heat-related illnesses, injuries, and fatalities.
 - [Protect America's Children from Toxic Pesticides Act](#)
 - Legislation that aims to strengthen protections against harmful pesticides, particularly those that pose a risk to the health of children, workers, and the environment.
 - [Pesticide Injury Accountability Act](#)
 - Legislation that would ensure that pesticide manufacturers can be held responsible for the harms caused by their products.
 - [Protect Our Farmers and Families Act](#)
 - Legislation that would cancel the registration and prohibit all uses of the pesticide diquat in the United States.
 - [Industrial Agriculture Accountability Act](#)
 - Legislation that aims to strengthen protections for farm workers, including ending high-speed slaughter systems.
 - [Child Labor Exploitation Accountability Act](#)
 - Legislation designed to ensure businesses, including the agricultural sector, protect children's rights and promote ethical labor practices.
- State
 - California
 - [Virtual Health Hub for Rural Communities Pilot Program](#)
 - Enacted legislation that establishes a program to enhance access to health services for farmworkers in rural California.
 - Nebraska
 - [Meat and Poultry Workers and Contractors Protection Act](#)
 - Legislation that seeks to enhance protections for meat and poultry workers, particularly for bird flu.

- Pennsylvania
 - Meat Packing and Food Processing Protection Act
 - Legislation that would improve health and safety standards in Pennsylvania's meatpacking and food processing sectors by establishing workplace safety committees, appointing a workers' rights coordinator, and providing public health emergency protections, and enforcing penalties for non-compliance.

EXPAND TRANSPARENCY AROUND FOOD SYSTEM PRACTICES AND THEIR IMPACTS

The concentration of market power in the hands of a few large firms has allowed them to dominate agricultural markets and limit transparency in their actions. Proposals to address market power and promote fairness in agricultural markets include updating federal antitrust laws to prevent mergers or acquisitions that concentrate excessive market power in single firms.¹⁸ Additional proposals to increase transparency include reforms to the distribution of federal crop insurance subsidies¹⁵ and checkoff programs.¹⁹

Examples of proposals to increase market fairness and access to information:

- Family Grocery and Farmer Relief Act
 - Legislation that would reduce concentration in the meatpacking industry by prohibiting major meatpacking companies from controlling more than one major category of meat production, enforcing divestiture plans, addressing pricing practices affecting independent grocers, and providing financial assistance and technical support to farmer cooperatives and small businesses seeking to acquire or operate meatpacking facilities.
- Livestock Consolidation Research Act
 - Legislation that would support research into consolidation and concentration in the livestock industry, and its effects on farmers, ranchers, and consumers.
- American Beef Labeling Act
 - Legislation aimed at requiring more transparent labeling of beef products sold in the U.S.
- Crop Insurance Transparency Act
 - Legislation that would require the USDA to provide more detailed information on the costs, payouts, and financial arrangements of the Federal Crop Insurance Program (FCIP).
- Opportunities for Fairness in Farming (OFF) Act
 - Legislation that would increase transparency in USDA's checkoff programs and prevent funds from being used by groups that lobby on agricultural policy.
- USDA Efforts to Promote Fair and Competitive Markets and Enforce the Packers and Stockyards Act
 - In 2024 and 2025, the USDA finalized several rules aimed at assuring fair competition and fair-trade practices for livestock farmers and protecting the agricultural system from monopolistic practices.
 - (RELATED UPDATE): The USDA proposed delaying implementation of the Poultry Grower Payment Systems and Capital Improvement Systems final rule until December 2027. The rule, originally set to take effect in July 2026, was part of a broader effort to enforce the Packers and Stockyards Act and would require greater transparency around required capital investments and restrict compensation systems that rank farmers against one another.

What's Next?

Long-term trends indicate that agriculture in general in the U.S. is consolidating into larger, fewer farms. Animal agriculture has followed a similar trend and has seen a shift toward larger operations. As the operations have become larger, they have increased the number of animals they produce. The next brief in this series focuses on this trend, discussing its potential impacts on public and environmental health, and highlighting policies that could help change it.

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Consolidation and Concentration in Animal Agriculture

Brief #3: Census of Agriculture Project

August 2026

Introduction

Animal agriculture in the United States has increasingly moved toward larger farms over time.¹ Although the number of farms producing livestock and poultry has declined, the number of animals produced per farm has grown — a trend called consolidation. A key factor driving consolidation has been the rise in confinement feeding practices, where animals are housed in restricted spaces to control their environment, feeding, and overall management.² Combined with changes in breeding, feed formulations, and other technologies designed to maximize output, these practices have lowered costs and boosted productivity.^{3,4} As a result, larger animal farms have been able to achieve greater economies of scale, benefiting from increased efficiency and higher output, which has made them more competitive and financially viable over smaller, more diversified farms.⁵

In the poultry and hog sectors, the same companies often own multiple stages along the supply chain, from breeding the animals through slaughtering and processing.⁶⁻⁹ In part due to this trend — called vertical integration — these industries have become geographically concentrated in specific regions, often determined by proximity to processing plants, feed mills, and transportation routes.^{6,7}

This brief uses data from the Census of Agriculture to explore trends in U.S. animal agriculture, examines the implications of consolidation and geographic concentration, and introduces policies aimed at addressing the public health, ecological, and economic consequences of these trends.

Trends

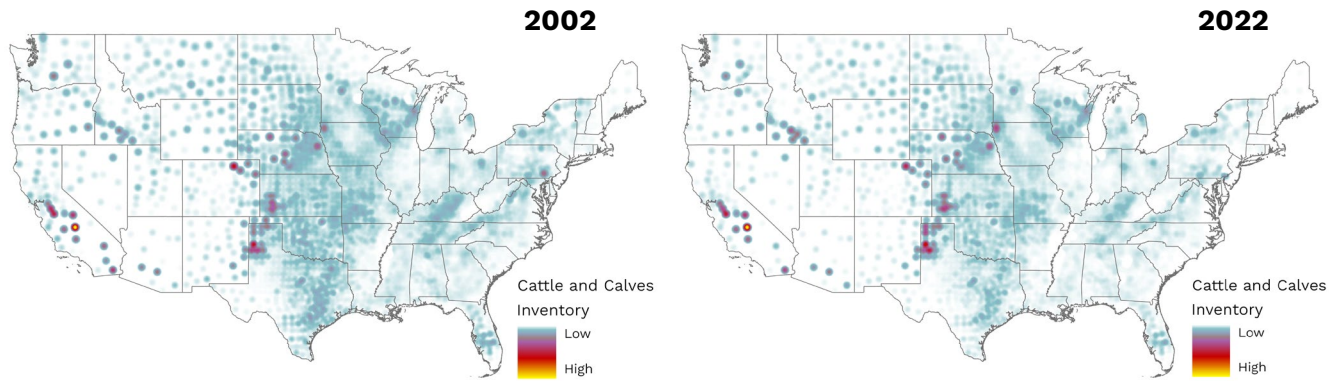
The Census of Agriculture, conducted every five years by the U.S. Department of Agriculture (USDA), tracks trends in animal agriculture across the country. Census data from 2002 to 2022, for example, show a distinct trend toward larger, more geographically concentrated farms. However, examining production figures for cattle, hogs, and broiler chickens (chickens bred and raised for their meat) reveals key differences in the way each sector is developing.

The numbers for animals in this brief are derived from inventory data, which capture the number of animals on a farm on December 31st of the year the census was conducted. Unlike sales data, which count animals marketed over the course of a year, inventories provide a snapshot of how many animals are being raised on a farm at a given point in time. In this section of the brief, the term “operations” will be used instead of “farms” to align with the terminology in the Census of Agriculture, which reports inventories at the operational level.

Cattle

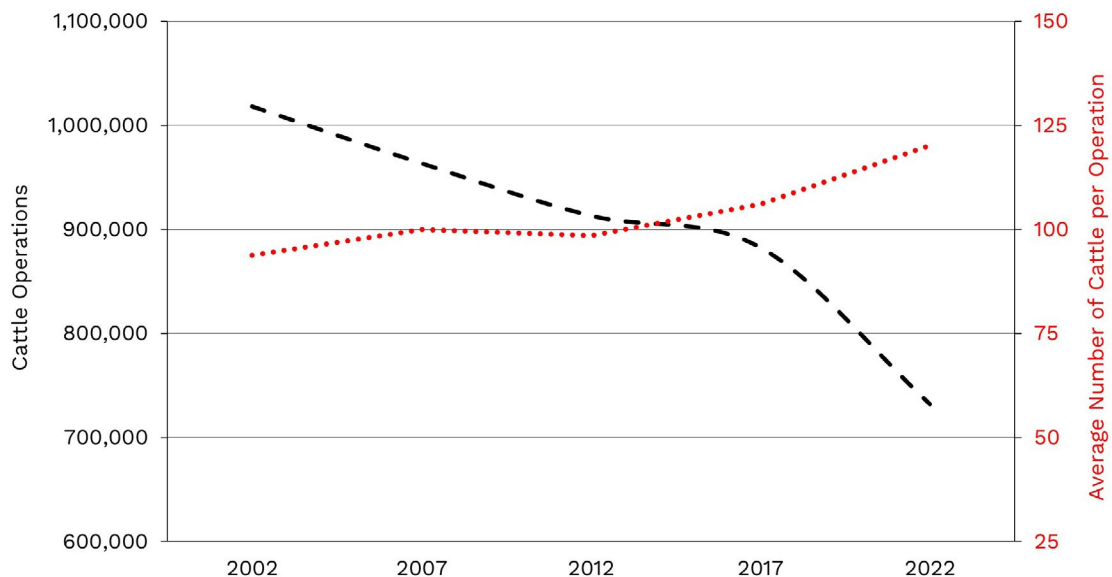


The inventory of cattle and calves in the U.S. declined by 8% between 2002 and 2022, representing a reduction of more than 7 million animals. The maps below show that there has been a general decline in cattle and calf inventories across most of the U.S. from 2002 to 2022, with 42 out of 50 states experiencing losses.



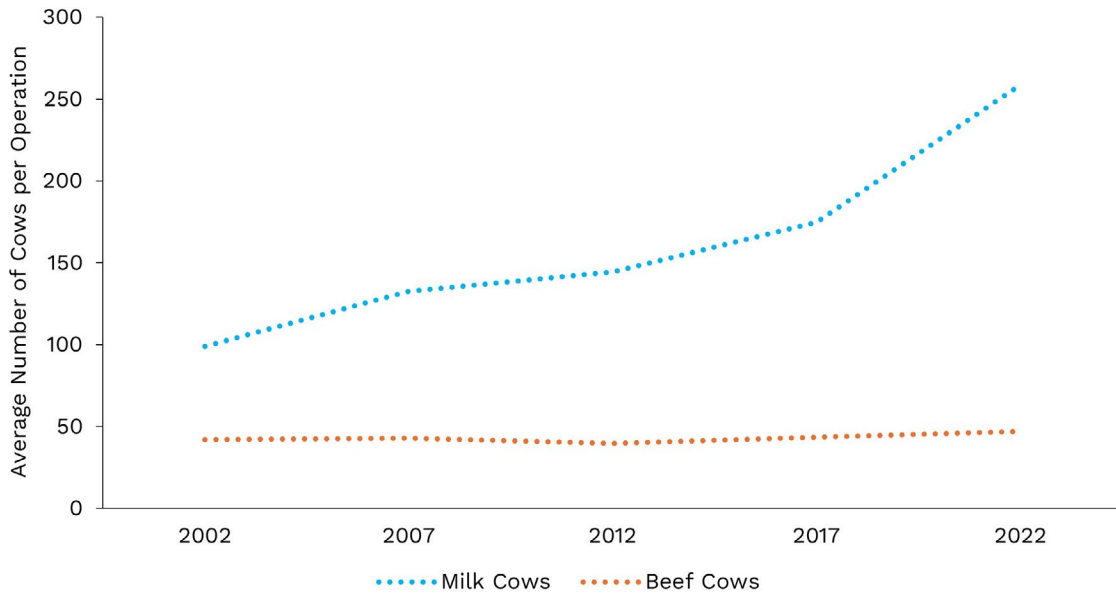
As cattle inventories declined, the number of cattle operations fell by 28%, while the average inventory per operation grew by 28%, showing a shift toward fewer, larger operations.

Number of Cattle Operations and Average Number of Cattle per Operation



Within the cattle sector, which includes both beef and dairy, dairy underwent much greater consolidation. Between 2002 and 2022, beef cow inventories declined by 13%, while the number of operations fell by 22%. Meanwhile, the average number of beef cows per operation increased by 12%. The milk cow inventory remained relatively static (increasing by 2%), while the number of milk cow operations dropped by 60%, leading to an average of 2.6 times more milk cows per operation. Dairy operations were also more geographically concentrated than beef operations.⁸

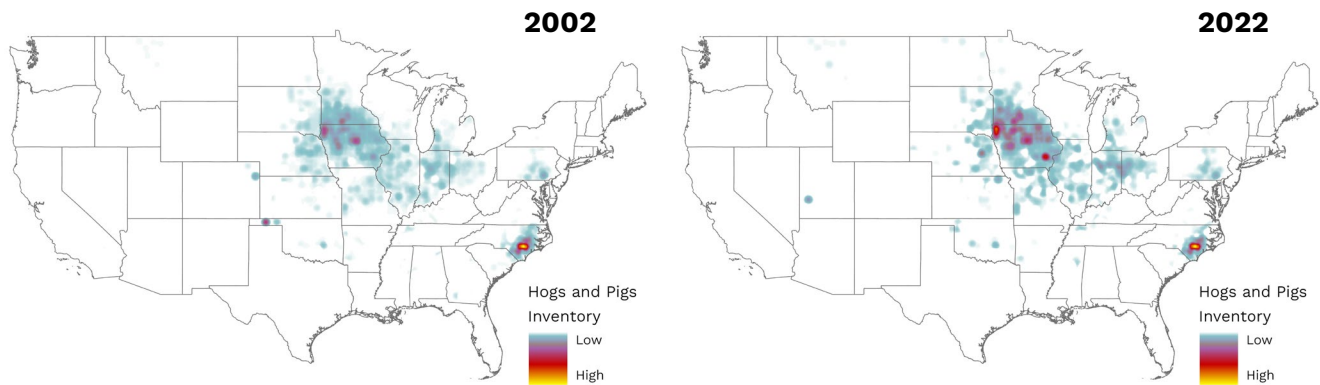
Average Number of Milk and Beef Cows per Operation



Hogs

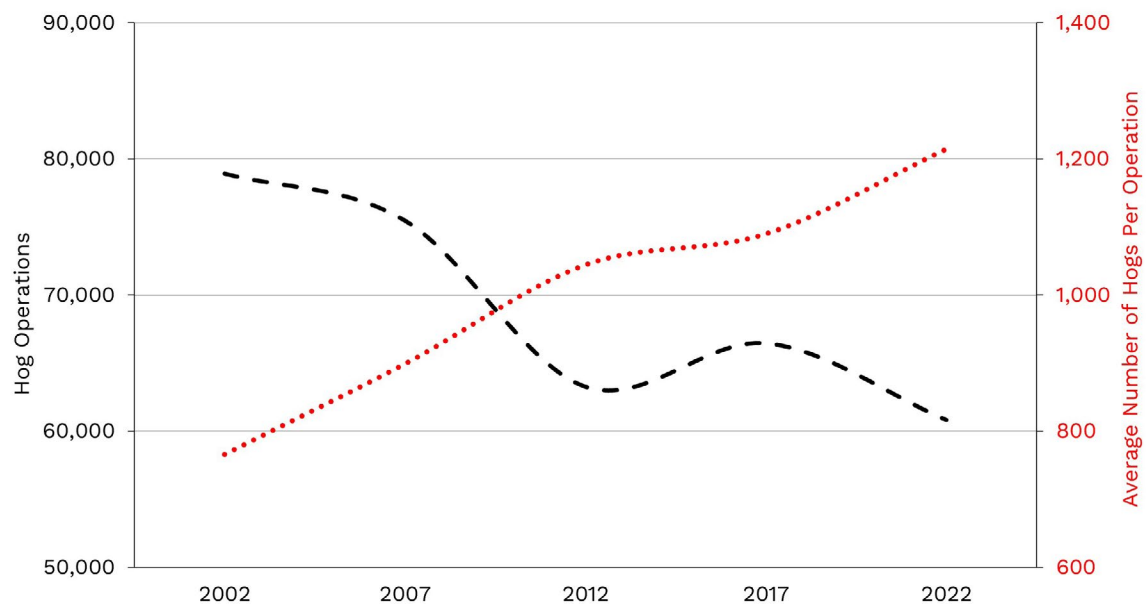


The inventory of hogs in the U.S. grew by 22% from 2002 to 2022, an increase of over 13 million animals. Hog production in the U.S. is largely concentrated in the Midwest, particularly in and around Iowa, and in parts of North Carolina and Pennsylvania. The maps below indicate that hog production intensified in those regions over time.



Although total inventory increased, the number of hog operations fell by 23%, and the average inventory of hogs per operation increased by 59%, reflecting a trend toward fewer and larger hog farms.

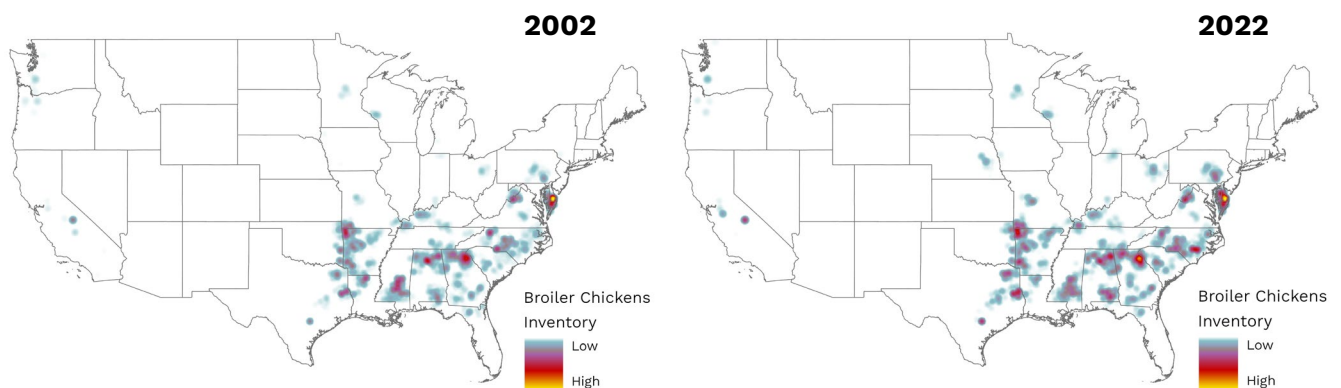
Number of Hog Operations and Average Number of Hogs per Operation



Broiler Chickens

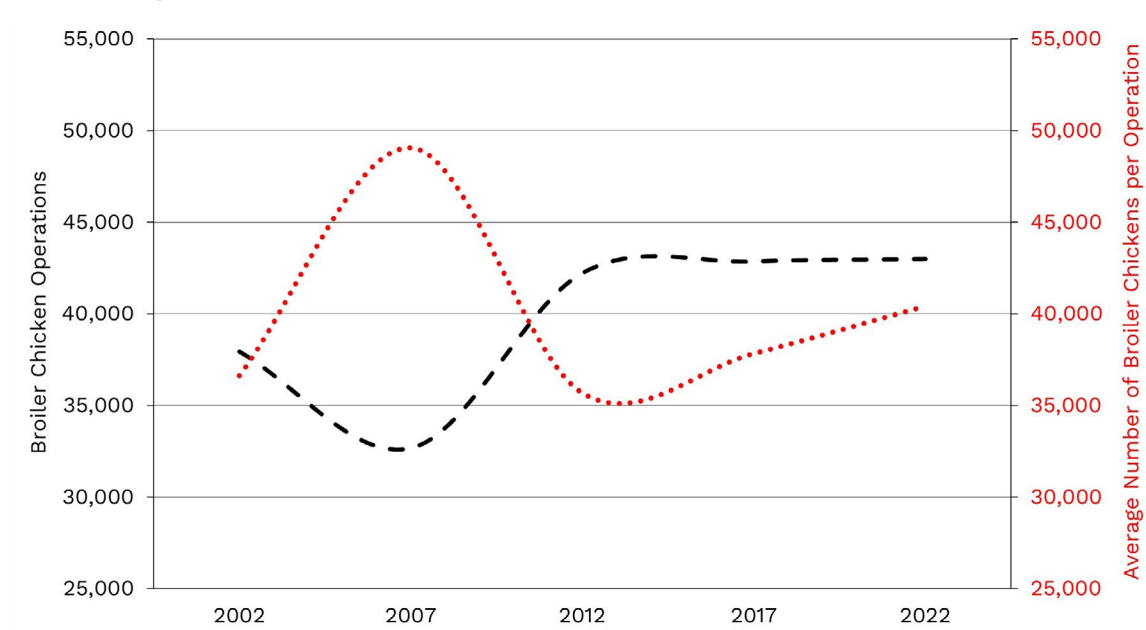


Between 2002 and 2022, there was a 25% increase in broiler chicken inventory in the U.S., representing over 300 million additional chickens. Broiler chicken production is primarily concentrated in parts of the South and the Mid-Atlantic. The maps below show that broiler chicken production intensified in these same regions over time.



During the same period, the number of broiler chicken operations rose by 13%, while the average inventory per operation increased by 10%.

Number of Broiler Chicken Operations and Average Number of Broiler Chickens per Operation



Implications

Animal agriculture in the U.S. has changed dramatically over the past several decades. Farms have become larger, more specialized, and more mechanized, focused on producing as many animals and animal products as possible. This shift has led to a dramatic rise in production numbers, reductions in labor requirements, lower costs of production, and lower retail prices for consumers.^{3,4} But the prices we pay at the store do not reflect the hidden costs borne by public health, the environment, and rural communities.

Unlike the small, diverse farms common before industrialization, today's large operations often house thousands, or even hundreds of thousands, of animals. Managing the huge amounts of waste that come from these operations is a major challenge. Crowded conditions, combined with how manure is handled, can increase health risks for nearby communities. These operations are known to release air pollutants,¹⁰ strong odors,¹¹ and disease-causing microbes,^{12,13} while manure can contaminate soil and water with nutrients, pathogens, and drug residues.⁶ People living nearby can experience higher rates of respiratory problems and infections, including those resistant to antibiotics.¹⁴ Persistent odors can affect daily life, lower property values,^{15,16} increase stress, and even raise blood pressure.^{17,18} These burdens often fall hardest on low-income communities and communities of color.¹⁹ As more animals are concentrated in certain areas, these health and environmental impacts tend to grow.

The effects of large-scale animal agriculture extend far beyond local communities. It contributes to climate change,^{20,21} uses large amounts of freshwater,^{21,22} pollutes water,^{21,23} alters land use,^{21,24} and fuels antibiotic resistance.²⁵ More hogs and chickens in the U.S. can exacerbate these problems, although a decline in beef cattle might offset some impacts. For example, beef generally produces far more greenhouse gases per gram of protein than pork or chicken,²¹ although management practices, like grazing versus feedlots, also

make a big difference.²⁶ How the structure of U.S. livestock production affects both local communities and the planet is therefore a critical question.

Overall, the consolidation of animal agriculture represents a major shift in how the U.S. produces food, with serious health, environmental, and economic consequences. While fewer cattle may help reduce some environmental impacts, growing numbers of hogs and chickens pose risks to public health and the environment. Policies are needed to protect rural communities from the negative effects of industrial operations and to reduce the industry's contribution to global climate change.

Policy Proposals

This section provides examples of potential policy approaches to address issues connected to the consolidation and geographic concentration of animal agriculture. This list is not exhaustive.

As a reminder, the first brief in this series introduced the four principles of the [CLF Public Health Agenda for Food Systems Change](#). Two of these principles are used below to illustrate proposed policy solutions that address issues discussed in this brief.

- Promote transitions to food production methods that support the health of people and the planet
- Expand transparency around food system practices and their impacts

PROMOTE TRANSITIONS TO FOOD PRODUCTION METHODS THAT SUPPORT THE HEALTH OF PEOPLE AND THE PLANET

A variety of policy shifts could help smaller, independent producers access markets, compete against larger operations, and support alternative animal production models.¹⁹ Larger industrial operations often control much of the existing resources and infrastructure, such as meat processing capacity, so improved access to processing is important to independent producers. Other proposals include changes to conservation programs, such as reforming the [Environmental Quality Incentives Program](#) (EQIP) to eliminate funding for manure management at concentrated animal feeding operations (CAFOs).^{27,28}

Examples of proposals to promote alternative food production models:

- Federal
 - [Environmental Quality Incentive Program \(EQIP\) Improvement Act](#)
 - Legislation that would enhance EQIP by expanding access, especially for small farmers, prioritizing funding for effective conservation practices, and providing states more flexibility in implementing the program.
 - [Conservation and Regenerative Optimization Practices \(CROP\) for Farming Act](#)
 - Legislation that would bolster climate-smart conservation practices under EQIP, including cover cropping, no-till farming, and improved grazing management.
 - [Soil Conservation And Regeneration Education \(Soil CARE\) Act](#)
 - Legislation that would establish training programs and curriculum to support long-term soil health management, land restoration, farm profitability, and resilience to climate-driven floods and droughts.
 - [Industrial Agriculture Conversion Act](#)
 - Legislation that would use existing conservation program funding to

- support farms as they transition away from large-scale industrial practices to more sustainable practices.
 - [Strengthening Local Meat Economies Act](#)
 - Legislation designed to support and expand the capacity of local and regional meat processing through changes in federal procurement practices and the development of digital meat exchange platforms.
 - [Strengthening Local Processing Act](#)
 - Legislation that aims to support small processors and producers by providing grants and training programs, as well as streamlining regulations.
 - [Agriculture Resilience Act](#)
 - Legislation that aims to help the U.S. reach net-zero greenhouse gas emissions in the agricultural sector by 2040. The bill would expand agroforestry research, create soil health grants, support small meat processors serving pasture-based farms, and reduce food waste.
 - [Partnerships for Agricultural Climate Action Act](#)
 - Legislation that would authorize grants supporting agricultural climate mitigation and adaptation strategies. The bill is modeled on Washington state's Sustainable Farms and Fields program, which incentivizes voluntary conservation practices.
- State
 - California:
 - [Farm to Community Food Hubs Program](#)
 - A state initiative enacted in 2021 designed to improve the accessibility of locally grown food by connecting small and mid-sized producers with community organizations, schools, and other institutions.
 - Illinois:
 - [Local Food Infrastructure Grant Program](#)
 - A state initiative enacted in 2024 designed to strengthen and expand the local food system in Illinois by providing financial support to enhance the infrastructure needed to grow, process, distribute, and market locally produced food.
 - Minnesota:
 - [Bottleneck Project](#)
 - A state initiative aimed at identifying and addressing challenges or bottlenecks within the state's food supply chain, particularly in relation to small and mid-sized agricultural producers.

EXPAND TRANSPARENCY AROUND FOOD SYSTEM PRACTICES AND THEIR IMPACTS

Transparency is critical for identifying and addressing illegal, inequitable, or otherwise harmful practices. The USDA has developed regulations aimed at eliminating deceptive and coercive practices in the meat industry. Other federal proposals include legal challenges of mergers that would concentrate excessive market power in single entities, and bills that would enhance reporting and accountability from corporate producers.

Examples of proposals to increase food system transparency and accountability:

- [Family Grocery and Farmer Relief Act](#)
 - Legislation that would reduce concentration in the meatpacking industry by prohibiting major meatpacking companies from controlling more than one major category of meat production, enforcing divestiture plans, addressing pricing practices affecting independent grocers, and providing financial assistance and technical support to farmer cooperatives and small businesses seeking to acquire or operate meatpacking facilities.
- [American Beef Labeling Act](#)
 - Legislation aimed at requiring more transparent labeling of beef products sold in the U.S.
- [Fairness for Small-Scale Farmers and Ranchers Act](#)
 - Legislation that seeks to address corporate mergers, strengthen antitrust laws in the food and agricultural system, and support local, small-scale farmers and ranchers.
- [Farm System Reform Act](#)
 - Legislation that would strengthen the Packers and Stockyards Act, restrict monopolistic practices of meatpackers and corporate integrators, place a moratorium on large-scale livestock and poultry farms, and restore country-of-origin labeling requirements.
- [Industrial Agriculture Accountability Act](#)
 - Legislation that would establish an Office of High-Risk Animal Feeding Operation (AFO) Disaster Mitigation and Enforcement in the USDA and requires large-scale AFOs to submit disaster preparedness plans.
- [Livestock Consolidation Research Act](#)
 - Legislation that would require the USDA's Economic Research Service to conduct research on consolidation and concentration in the livestock industry, determine its impacts, and inform policies that would promote fairer competition and market opportunities for smaller producers.
- [Freedom for Agricultural Repair and Maintenance \(FARM\) Act](#)
 - Legislation that would require manufacturers to share documentation, parts, and software with farmers and independent repairers to restore competition in the agricultural repair market.
- [Fertilizer Transparency Act](#)
 - Legislation that would establish a mandatory weekly price reporting program for key fertilizer inputs and products to increase transparency on fertilizer and fertilizer product prices.
- [Fair and Competitive Livestock and Poultry Markets Proposed Rule](#)
 - This 2024 proposed rule, later withdrawn in 2025, was designed to support fair and competitive markets for livestock and poultry.
- [Inclusive Competition and Market Integrity Under the Packers and Stockyards Act Final Rule](#)
 - The final rule sought to clarify standards under the Packers and Stockyards Act for prohibited practices relating to discrimination, retaliation, and deception in contracting.
- [Federal Trade Commission lawsuit blocking Kroger's acquisition of Albertsons](#)
 - A lawsuit that successfully blocked the largest supermarket merger in U.S. history, arguing that it would eliminate competition, lead to higher grocery prices, lower the quality of products and services, and negatively impact workers.

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