



Bigger Is Not Better: The High Cost of Agribusiness Consolidation

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Introduction

When Americans think about agriculture, they often think of the red barn, a family farmer, and a cute and cuddly black and white cow munching in a field. The U.S. agriculture system, however, bears little resemblance to that picture. Today's agricultural system is like an hourglass, with two million U.S. farmers and 21 million food and farm workers on one side, and 325 million U.S. eaters on the other. In between are a handful of multinational companies that control nearly everything about how food gets from producer to consumer. These agribusiness firms often overlap, controlling huge swaths of the market. Two of the largest pork companies, Tyson Foods and JBS USA, are also the top two beef producers. Along with two other firms, they control 83 percent of beef production. Four companies control 70 percent of the global agrochemical market. Ninety percent of corn, cotton, and soybean seeds planted in the U.S. contain genetics patented by Monsanto, now owned by Bayer. The list goes on.

These companies did not start out as giants; most began with a manufacturing or processing niche in the agricultural system. But nearly 70 years of policy decisions facilitated widespread consolidation and made them powerhouses. The size, economic influence and political power of these firms gives them control over the livelihoods of farmers and workers. It also allows them to control the health and safety of the communities where food is produced and the decisions of those who eat it.

But such a consolidated system is both damaging and fragile. As the Covid-19 pandemic swept across the United States in the spring of 2020, grocery store shelves emptied as anxious shoppers stocked up on essential goods like milk and toilet paper. Analysts sought to reassure consumers that there was more than enough food in the supply chain, but it became evident that there were weak links. Meatpacking plants, dairy processors, and canning facilities closed as their workers got sick.¹ With no place to send their raw goods, farmers were forced to dump milk, plow vegetables into fields, and euthanize hogs, even while lines grew at food banks.

A highly specialized and concentrated supply chain is more vulnerable to shocks. Sure enough, the shuttering of just three pork packing plants early in the pandemic impacted 10 percent of the nation's pork supply.² Packing plant closures overall eventually affected 25 percent of U.S. meat processing capacity.³ The processing bottleneck led to a surplus of market-weight hogs on farms; hog prices plummeted and farmers had to euthanize their animals. At the supermarkets, shoppers saw shortages and rationing of bacon and ham, with higher prices when they could find them. When President Donald Trump invoked the Defense Production Act to force the plants to reopen, the supply chain recovered but with tremendous cost, as the order did not mandate any worker protections. By September 2020, more than 44,000 meatpacking plant workers had tested positive for Covid-19, and at least 210

had died,⁴ while the rural communities where the plants are located became some of the worst virus hot spots in the nation.

The Covid-19 pandemic was by no means the first time weaknesses have been revealed – even lethal ones. A 2018 E. coli contamination led to a total nationwide recall of California romaine lettuce.⁵ A 2010 salmonella outbreak sickened 56,000 people and led to a recall of 550 million eggs.⁶

The crises go far beyond food safety. Agriculture is responsible for one-third of total greenhouse gas emissions, with the world's top five meat and dairy companies contributing more than Exxon, Shell, or BP.⁷

Today's farming practices have poisoned air and water, including creating an annual "dead zone" in the Gulf of Mexico from agricultural runoff; wreaked havoc on the world's biodiversity; and harmed public health in myriad ways. Rural communities have been hollowed out as farmers, squeezed by multinational buyers and sellers, face limited choices and have limited power over their livelihood. Farmworkers and other workers along the food chain have even less power. The titans of the system assert that this is the only way to feed the world, but the system fails there as well: at least 720 million people, including 42 million in the U.S., still go hungry. The contributions of industrial agriculture to climate change and impact on water, air, biodiversity, public health, and rural economies are societal debts that are already coming due, often paid by people and communities who can least afford it.

How did we get here?

This is not an accident. In the last half-century, political and economic choices at all levels of government, often based on pressure from agribusiness, have transformed agriculture into an industrialized system in which food is a commodity to be produced cheaply and in great volume, and sold to the highest bidder.⁸ Farming, once reliant on diversification and complex ecosystem knowledge, has become highly specialized and dependent on fossil fuel-based technology ranging from chemical fertilizers and pesticides to genetic engineering to precision data. Agribusiness promoted this new kind of agriculture, alongside the federal government and research institutions, claiming that it was the only way to feed the world. But the more corporate- and business-focused the approach to food and farming has become, the more the costs to consumers, rural communities and the environment have grown.

Technology and specialization have led to increased production of monoculture, commodity agriculture and larger farms. Genetically modified seeds and their attendant herbicides, precision agriculture techniques based on GPS and other data, and automated climate-controlled barns have allowed a single farmer or farm family to manage more acres or animals with less labor.⁹ High capital costs and prices below the cost of production, however, drive a never-ending and costly push for higher volumes and larger economies of scale. As industrialization pushed farms and agribusiness to grow, federal enforcement of antitrust laws, which had kept

businesses from controlling too much of their market, declined. The result has been extraordinary economic consolidation across agriculture, and with it, a concentration of power.

Industrialization and its subsequent consolidation have changed who decides what, where, how, and by whom food will be produced, as well as who will get to eat it. Decision-making about food and agriculture has moved from a decentralized and public arena that included farmers' kitchen tables, local livestock auction houses, and publicly-funded agricultural research institutions, to a highly-concentrated and private arena limited to the dominant agribusiness firms, their boards, management, and shareholders.¹⁰ Also, because of globalization, the decisions that these few stakeholders make about their own financial interests and that of their companies now shape the world's food and agriculture systems and the fate of all of those that are part of it.

Putting so much decision-making power into the hands of so few makes a highly consolidated economy an unjust economy. The resulting crises – of the climate, the broader environment, hunger and food security, and rural communities – cannot be addressed on their own, separate from the concentrated power that helped to cause them. Addressing these crises offers an opportunity to reverse course and protect farmers, workers, and communities, but these crises also contain threats of even further consolidation.

As a result of the COVID-19 pandemic, the retail and service sectors of the food system have seen accelerated change through increased reliance on automation, data, gig workers, and delivery, and these changes are expected to last when the pandemic is over. It stands to reason that food production and processing may also be restructured post-pandemic, leading to even more consolidation. However, the much bigger change could come from the agribusiness response to the climate crisis, which has been to propose "solutions" such as soil carbon markets and "green finance." These market-based mechanisms are supposed to incentivize better farming practices on the ground, but because these mechanisms have almost no protections from consolidation and concentration, they will almost certainly lead to more control of land, farming operations, and nature itself owned and controlled by agribusiness and the financial sector.

But there is an alternative. Despite the huge reach of the consolidated and globalized food system, 70 percent of the world's population still relies on small-scale or peasant farmers for their food.¹¹ And despite agribusiness claims that industrialization is the most efficient way to feed the world, a mountain of evidence points to the contrary: it is actually a network of localized and regionalized farmers and markets that most efficiently feeds the world, community by community.¹²

This report explores the injustices caused by decades of agricultural consolidation, including a history of how the sector consolidated; an examination of the scale of the problem; the specific impact on farmers, rural communities, the climate crisis, and the environment; and a look at how powerful industry groups continue to influence

laws and regulations in their own favor. Finally, we will look at alternatives to the status quo and how to build a decentralized climate-neutral farm and food system that prioritizes food producers, rural economic health, and the environment over corporate profits.

A Discussion of Terms

We discuss both concentration and consolidation in this report. Concentration refers to the share of the market controlled by the largest firms. Corporate consolidation – the merging of two companies or the acquisition of one company by another – can be a major factor in increasing market concentration. Consolidation in the farm and food sector means that more of the market is controlled by fewer businesses, giving those businesses more power and leaving less control for everyone else.

To assess whether a given market is still freely competitive or may be subject to manipulation by the largest players, many economists look at the percentage of the market controlled by the top four firms. A sector with a four-firm concentration ratio (CR4) of more than 40 percent is considered uncompetitive and in the range of being an oligopoly; a CR4 of over 70 percent leans towards monopoly. Above this threshold, concentration can entrench dominant market positions for the largest companies; exert price pressure on suppliers or buyers; and put the market at risk for collusive or coercive behavior by the biggest entities. Oligopolies maintain their positions by creating barriers to entry for new firms and establishing mutually beneficial pricing arrangements with each other. This kind of behavior in markets controlled by just a few firms is more common than outright monopolies or cartels, but is harder to identify because the companies are ostensibly in competition.

Highly concentrated buyer power, such as in meatpacking, is called monopsony. Seller concentration, the better-known monopoly, is prevalent in seeds, agricultural chemicals, and equipment. Both forms of market power allow the company a great deal of control over the practices of those who sell to or buy from them, as we will explore.

Large firms do not just dictate terms to companies in their supply chain, they buy up those companies, in a process called vertical integration. Tyson Foods was a pioneer of vertical integration, purchasing chicken breeders, feed mills, slaughter facilities, and transportation companies and incorporating them under the Tyson umbrella. Vertical integration allows the company to control costs and specifications and to keep all profits in-house. Horizontal integration happens when competing firms merge, which can look like the German seed and chemical giant Bayer purchasing the American seed and chemical giant Monsanto, or like Coca-Cola buying small smoothie company called Odwalla in order to diversify its beverage profile.

Concentration is self-reinforcing; consolidation in one part of the industry triggers similar activity across the industry. Large retailers prefer “one-stop” sourcing from large wholesalers and processors, while the processing industry relies on just a few buyers for most sales. In 2014, for example, Walmart accounted for 10 percent of net sales for Heinz Foods and 26 percent of Kraft’s. Heinz and Kraft merged in 2015, into a company now reliant on Walmart for over one-third of its sales. As firms grow, they prefer to source from fewer entities in their supply chain, as it simplifies ordering, consistency, transport, and other processes. A company that has recently expanded through a merger or acquisition may exert pressure on its suppliers to likewise expand or make other changes.



A Brief History of Corporate Agriculture in the U.S.

Despite how it may appear, the consolidation of the U.S. agricultural sector did not happen naturally, as if by gravity. It is the result of a century of changes in policy and culture both in farming and across the economy, including the rise of globalization and a broader trend towards concentration, some of which was orchestrated by big business to benefit itself.

At various periods in U.S. history, high levels of concentration led to a political response and antitrust enforcement. The roots of the current system can be found in the post-World War II period, when politicians of both parties worked to dismantle the New Deal Agriculture framework. The impact of the New Deal is complicated – it intentionally excluded and discriminated against people of color and benefited larger farms disproportionately (though they would be considered small by today’s standard). However, the New Deal agriculture programs set up several generations of farmers for steady prices and decades of success.¹³

Early farm bills, following from the 1933 Agricultural Adjustment Act, controlled commodity production, stabilized farm prices, and took marginal land out of production in a system known as supply management. Absent this system, individual farmers will often grow as much as they can to increase their own profits. If every corn farmer grows all they can, the market will be flooded at harvest time and prices for all farmers will crash. Supply management curbed the overproduction

that made prices fall by guaranteeing a floor price for farmers based on their costs of production, incentivizing conservation practices, and maintaining strategic grain storage. Importantly, the price floors meant that agribusiness companies and other buyers of farm goods had to pay the real cost of these goods.¹⁴

Since World War II in particular, a concerted effort began pulling apart the New Deal approach to agriculture.¹⁵ Over the same period, some former weapons makers were transitioning their operations to produce farm equipment, chemicals, and fertilizers.¹⁶ Agribusiness corporations began to consolidate through horizontal and vertical integration, purchasing competitors and parts of their supply chain.¹⁷ Inspired by post-WWII proposals from business groups to address what they saw as the inefficiencies of farming in an age of technology, Nixon's Secretary of Agriculture, Earl Butz, famously exhorted farmers to "get big or get out." The business groups saw the primary "farm problem" as a "persistent excess of resources, particularly labor" – that is, too many farmers. They aimed to eliminate one-third of farm families, replacing a farm system of millions of family farms with many fewer larger farms, producing more product with less labor and more technology.¹⁸

This series of federal farm bills lowered price floors, reduced the grain reserve, and brought more acres into production, including fragile lands not suited for production agriculture and increasing soil erosion. Lower price floors for farmers allowed buyers to pay less for farm goods than they cost farmers to produce, greatly benefitting agribusiness companies. These changes worked as their proponents had intended, pushing farmers out of business. For those farmers that remained, Congress established a system of taxpayer-funded direct payments, but it made up only a fraction of the lost market revenue. Profits, meanwhile, began to stream upward, accruing to increasingly fewer companies and their leaders rather than recirculating in local communities.

Regulation and antitrust enforcement diminished under both the Carter and Reagan administrations. In the 1990s, U.S. agribusiness companies got an additional boost as free trade agreements gave them access to an increasingly globalized market. The impact of globalized free trade on agriculture has been immense, further accruing power to wealthy countries and, especially, to wealthy corporations. These agreements have locked countries around the world into production of goods for export – from corn and soybeans in the U.S. (and globally) to bananas and coffee in many Global South countries. This has been a financial boon for agribusiness companies and shareholders, but it is socially and environmentally harmful. It also greatly undermines each country's own food security and sovereignty.¹⁹

Further opening the markets, the 1996 U.S. Farm Bill, known as the "Freedom to Farm Act," ended the last vestiges of supply management for commodity grains. (Supply management was ended for dairy in 2014.) This further opened markets. By 1999, with previously fallow lands planted and no grain reserve to take up surplus, a glut of soybeans and corn caused prices to fall by 40 to 50 percent.²⁰ Farmers referred to the legislation as "Freedom to Fail." The new law, focused exclusively on production, also further entrenched standardized and industrialized farming practices, ramping

up planting of chemical- and machinery-dependent monocrops across farm states. It also increased pesticide and herbicide use, while discouraging use of cover crops, crop rotations, hedgerows, and other biodiversity-promoting and soil conservation practices.

At the same time, meatpacking companies were investing in new, technologically advanced models for raising hogs in confinement barns. Their model was Don Tyson's success in building a vertically-integrated chicken company, which owned all parts of the supply chain except the riskiest: the farm. The low grain prices following the 1996 Farm Bill, devastating for grain farmers, were a shot in the arm for the burgeoning meat industry, which saved nearly \$35 billion between 1997 and 2005 as a result of buying feed grain below the cost of production.²¹ To make up some of the lost revenue that grain farmers had formerly gotten from the marketplace, Congress authorized "emergency" farm payments that climbed to \$20 billion. These taxpayer subsidies were made permanent in the 2002 Farm Bill.²² In state legislatures, livestock lobbyists were writing the laws and regulations to govern their emerging industry, stripping citizens' rights to oppose new large-scale animal operations and shifting responsibility for pollution caused by large concentrations of manure onto the public.²³

By the mid-2000s, the stifling effects of agribusiness consolidation on farmers, rural communities, and the environment were well-documented, if not widely recognized outside of rural communities. So there was a great deal of hope in rural areas when, in 2008, presidential candidate Barack Obama campaigned on enforcement of the nearly century-old antitrust rules and breaking up agribusiness power. Once in office, his USDA and DOJ conducted a landmark year-long joint investigation of the issue in 2010, holding hearings to learn how consolidation impacted the lives and businesses of farmers and other farm stakeholders. Thousands of farmers testified and submitted public comments, sometimes at great threat to their livelihoods, about the stranglehold effects that highly concentrated agribusiness corporations had on their operations.

However, despite hundreds of pages of testimony and hundreds of thousands of public comments from all agricultural sectors²⁴ including from contract poultry farmers who said they risked losing their farms by testifying, the inquiry ended with the release of a 24-page memo in 2012 concluding that the process "reinforced the [DOJ's Antitrust Division] commitment to vigorous antitrust enforcement in the agricultural sector."²⁵ No specific actions, antitrust enforcement measures, or changes to rules or laws resulted from the investigation. Industry observers pointed to significant pressure that the agribusiness lobby had put on Congress and the administration to do nothing.²⁶

In the years since, DOJ has greenlighted many major agribusiness mergers, including those that shrank the "Big Six" seed and chemical companies down to the "Big Three"²⁷ and further consolidated the meatpacking industry. While the department's approval of these deals required the companies to divest various assets in the name of continued competition, the actual changes were minimal, and the agricultural

sector has become markedly more concentrated in the last decade. Now, the Covid-19 pandemic threatens to consolidate power even further. Without real government intervention, millions of small and midsize businesses will close permanently as a result of the pandemic, and the largest companies will emerge even stronger.²⁸



The Scale of the Problem

The agriculture sector, also heavily impacted by changes in farm programs, global trade, and growth of technology, has followed Earl Butz' advice. From seed to farm to livestock market to grocery store, the trend has been to get big or get out. Whether through buying a neighbor's farm ground, acquiring a competitor's seed company, or integrating suppliers under one corporate umbrella, getting big today means consolidation.

Consolidation has meant corporatization. All sectors of the farm economy are overwhelmingly controlled by corporate entities, whether through direct corporate ownership of land, for example, or through other means of power that effectively dictates behavior of suppliers or buyers. Multinational firms are also big players across agribusiness.

In this section, we'll examine what that means for various sectors.

Farms

The overall story of farms and farmland in the U.S. is fewer and bigger: the number of farms has fallen, and their size has increased. Farm numbers peaked at 6.8 million in 1935,²⁹ then fell sharply until leveling off at about 2.3 million in 1974.³⁰ Since then, decline has continued, but at a slower pace. There were just 2 million farms in the USDA 2017 Census of Agriculture.³¹

Farms have not gone out of business evenly. Mid-size farms have been hardest hit, while the numbers of very small and very large farms have increased.³² In the 2017 Census of Agriculture, farms with 50 to 1,000 acres declined 5-15 percent. Only very small farms (fewer than 10 acres) – the kind that sell at farmers markets and through community supported agriculture (CSAs) – and very large farms (more than 2,000 acres) increased in that period.³³

Many of these midsize farms were part of the “Agriculture of the Middle,” defined as farms in the middle revenue categories (\$50,000 to \$500,000 in sales).³⁴ Formerly the mainstay of agricultural production, there were 338,000 of these farms in 2017, almost 108,000 fewer than just 20 years prior.³⁵ These farmers are too large to sell direct to consumers (e.g., at farmers markets) and too small to sell to the large-scale distributors that supply large stores. They have been especially hard hit by consolidation across the sector, as there are ever-fewer mid-size businesses to buy from and sell to.³⁶

The result is that the majority of food comes from the biggest operations. In 1991, farms with \$1 million or more in gross cash farm income (GCFI) accounted for about a third of all farm production; by 2015, they accounted for more than half. On the other end, small farms with less than \$350,000 in GCFI dropped from 46 percent of production to 25 percent in that same period.³⁷ In real farm numbers, 65,300 farms produced 51 percent of agricultural production in 2015, while another 1 million account for just 1 percent of production.³⁸ Put another way, in 2017, 5.2 percent of farms accounted for 75 percent of sales.³⁹

Consolidation at the farm level has occurred alongside greater farm specialization. Farms reorganized to focus on either livestock or crops, or on a greater specialization of one or the other, which reflects the shift from raising farm animals on diversified farms to large-scale animal feeding operations. From 1996 to 2015, for instance, the percentage of corn grown on farms that also raised livestock fell from 46 percent to 33 percent. Few farms grow only one crop, but farms increasingly grow just two or three, down from four to six previously. Livestock production has shifted towards farms that rely on purchased feed rather than growing their own crops for feed.⁴⁰ This trend is reflected not just in production, but in control of the land as well. Essentially, a small number of very large farms control most of the farmland. The average farm had 155 acres in 1935, which had grown to 444 acres in 2017.⁴¹ But

given the growth in the number of both very small and very large farms, averaging the acreage does not paint an accurate picture. In 2017, the largest 4 percent of farms (2,000+ acres) controlled 58 percent of all farmlands, while the bottom 13 percent of farms (<10 acres) controlled just 0.14 percent of farmland.⁴²

Seeds and Chemicals

Until the late 19th century, most U.S. farmers saved seed from their own crops to plant the following year and share with neighbors. With the development of seed certification programs in the early 1900s, more farmers began to buy seed commercially because they could now be assured of their quality. Seed research and development was done almost exclusively by land-grant colleges and universities and other public agencies. Their findings were in the public domain, which meant that any seed company – small, family-owned businesses – could replicate and sell new varieties developed by these institutions.

New high-yield hybrid corn varieties (developed through traditional breeding methods, not genetic modification) became popular in the early 20th century, leading to an expansion of the private sector in the commercial seed market. The 1930s saw almost 200 companies forming or expanding to produce hybrid corn. By 1965, more than 95 percent of U.S. corn acreage was planted with hybrid seed.⁴³

Two changes – one via legislation and one via Supreme Court ruling – fundamentally changed access to seeds in the United States.⁴⁴ The 1970 Plant Variety Protection Act and the 1980 Supreme Court case *Diamond v. Chakrabarty* allowed propriety rights over seeds, meaning seeds could be patented and the genetics of the seed is intellectual property that is owned. This reflected the interest of larger corporations over family farmers. Additionally, these newly patented seeds could be genetically modified to withstand herbicides, to create their own resistance to pests, and other traits. This meant companies were able to sell seeds and fertilizers (along with other products) as a profitable and expensive product. Federal policies in the 1980s also began encouraging agricultural universities to partner with private companies on research, which had the effect of steering research towards industry goals.⁴⁵

The following decades saw rapid and large-scale change in the seed market. Only half of the 14 leading global companies in 1983 were still in top sales positions by the end of the 1980s.⁴⁶ By the 2000s, the major players were consolidating rapidly. For example, in 2005, Monsanto bought Seminis, which controlled 40 percent of the U.S. vegetable and fruit seed market, and two weeks later, acquired the country's third-largest cottonseed company.⁴⁷ From 1996 to 2018, there were nearly 400 seed company ownership changes.⁴⁸

In 2015, six large multinational companies dominated seed and agrochemical markets in the U.S. and globally: BASF, Bayer, Dow Chemical, DuPont, Monsanto, and Syngenta. The “Big Six” developed and sold pesticides and seed treatments, sold crop seeds, and developed genetically modified (GM) seed traits to be bred into

their own seeds or licensed to another company. Today, the Big Six has become the Big Three: Bayer; Corteva Agriscience; and ChemChina.⁴⁹ Together with BASF, the Big Three control 70 percent of the global agrochemical market.⁵⁰

The situation is the same for seeds, where the Big Three, along with France-based Limagrain, now control 66 percent of seed sales globally.⁵¹ For specific crops, the percentages are even higher: even before these mergers, three firms controlled 60 percent of the global vegetable seed market.⁵² For the most widely-planted row crops, genetically modified varieties, the vast majority of which contain genetics patented by Monsanto,⁵³ accounted for 92 percent of corn, 94 percent of soybeans, and 98 percent of cotton planted in the U.S. in 2019.⁵⁴

Livestock: Beef, Hogs, Poultry, Dairy

Thanks to low grain prices, nearly non-existent antitrust enforcement, and industrialization, the livestock industry has consolidated in all directions: on the farm and at the processing plant; horizontally, through mergers and acquisitions of competitors; and vertically, through acquisition of companies along the supply chain. The growth and concentration in livestock markets is a key driver of the problems we will examine in the coming pages.

At the farm level, there has been a sea change since the late 1980s in how livestock are raised, from diversified farms, with crops and animals together and sold locally by the farmer, to concentrated animal feeding operations (CAFOs) in which animals are raised by the thousands in feedlots or large climate-controlled barns, with their waste collected in large ponds and disposed of, untreated, as fertilizer on farm fields. Most of these animals are raised by farmers directly for large meatpacking companies, through contracts whose terms they have little say in.

The shift to CAFOs has drastically increased the number of food animals in production, while eliminating the vast majority of farms and farmers. As we will explore later, large-scale animal production has also led to tremendous water and air pollution in many rural communities and far downstream.

In 1987, there were 52 million hogs on 243,000 hog farms; by 2017, 72 million hogs were on 66,000 farms.⁵⁵ The 40 largest hog producers control two-thirds of all hogs in the U.S.⁵⁶ In dairy, there were 233,320 dairy farms in 1987⁵⁷; that number had shrunk to 40,300 by 2017⁵⁸ and to 34,000 just two years later.⁵⁹ Cow numbers declined by 1.5 million in those decades,⁶⁰ but milk production increased from 142 billion pounds in 1987⁶¹ to 215 billion pounds in 2017.⁶² In 1950, 580 million broiler chickens (those raised for meat) were raised on 1.6 million farms, for an average of 363 birds per farm. In 2007, nearly nine billion birds were produced on just 27,000 farms – nearly 330,000 birds per farm.⁶³

The beef industry is the one livestock sector that has not gone through such extreme consolidation, though it is moving in that direction. As larger animals than poultry

or hogs, beef cattle take longer and require more space to reach maturity, and thus it has not yet proven cost-effective or efficient to raise them in confinement from birth to slaughter. Thousands of small-scale farmers around the country still raise beef cattle for a year or so on pasture, before selling the animals to a feedlot to be brought to slaughter weight. However, as regional beef markets consolidate and leave these producers with fewer options to sell their animals at a fair price, they, too, are at risk of being squeezed out.

The livestock industry is a prime example of monopsony, or concentrated buyer power. The top four companies in their respective sectors control 83 percent of beef packing, 66 percent of the hog market, and 51 percent of the broiler chicken market.⁶⁴ As the Covid-19 pandemic revealed, slaughter capacity is extremely concentrated: seven percent of beef plants – just 49 facilities – process 95 percent of all U.S. beef; while five percent of pork plants – 33 facilities – process 92 percent of pork.⁶⁵ In 1977, 38 percent of hogs were slaughtered in plants processing more than one million animals per year⁶⁶; in 2019, it was 92 percent.⁶⁷

There are similar trends in dairy marketing and processing. The four largest dairy cooperatives marketed 41 percent of all U.S. milk in 2017, though that percentage is much higher at the local level, where there is sometimes only one processor. The number of dairy processing plants shrank by half from 2017 to 1970, while the number of dairy cooperatives – farmer-run organizations formed to give farmers a better shot against big corporations, but which now too often look like corporations themselves – have declined from 1,244 in 1964 to just 118 in 2017.⁶⁸

As processor concentration has increased in all sectors, sales have shifted from the open cash market to contract arrangements between processor and grower. Contracts determine the terms of sale for commodities before they are produced. While contracts can guarantee a secure future price for a farmer, the reality is that the buyer generally sets the terms, which can be extremely restrictive for and unfavorable to the farmer. In 2017, more than one-third of all commodities were produced under contract,⁶⁹ with large variations by sector. More than 95 percent of broiler chicken, for example, was raised under contract.⁷⁰

Finally, adding a new twist to the shape of vertical integration, the largest food retailers are now getting into livestock and dairy markets themselves. Their reason, ironically, is that industry consolidation has raised the prices they pay their suppliers. Their solution is further consolidation. Rather than have to take the beef price offered by Cargill or Tyson, Walmart opened its own meatpacking plant in early 2020,⁷¹ after opening an Indiana milk bottling plant in 2018. Prior to the opening of the milk plant, Dean Foods, a major Walmart supplier, terminated contracts with over 100 dairy farmers in eight states.⁷² With Walmart, a major Dean customer, about to process its own milk, Dean had to cut production in its supply chain. Walmart's beef processing plant will likely have a similar effect on farmers in the region, as the corporation is only working with select suppliers of a specific cattle breed. As Walmart increasingly supplies its own raw products and buys fewer of these goods on the commodity market, farmers who sell into the commodity market will see further cuts in what

their buyers purchase.⁷³ In an even more sweeping example, Costco opened a fully vertically-integrated plant in Nebraska last year to produce its \$4.99 rotisserie chickens.⁷⁴ The company has recruited farmers in Nebraska and western Iowa to raise the birds, which will be fed by Costco-milled feed and eventually processed at the Costco-owned plant and sold at Costco stores. Industry experts predict that if the venture is successful, other retailers will bring their animal protein production in-house,⁷⁵ which would further – and dramatically – consolidate the food chain.

Machinery

Since the invention of the plow and likely even before, farm tools have allowed people to do more work with less effort. In at least the last century, agricultural machinery has been a major technological driver of consolidation. Greater horsepower, climate-controlled tractor cabs, and now global positioning systems guiding precision chemical application have allowed farmers to farm many more acres. The rising costs of the equipment mean that they must continue to grow their operation in order to see a return on their investment.

Farm machinery has driven consolidation, but rapid consolidation within the sector in recent decades has profoundly changed the machinery sector as well. As in livestock markets, a few large firms dominate the industry in North America and globally: John Deere, CNH Industrial, and AGCO. Recent information on market share is proprietary, but the four largest machinery makers controlled 50 percent of global sales in 2009.⁷⁶ Farm equipment is larger, more expensive, and more computerized today. The average market value of machinery and equipment per farm was \$133,000 in 2017, from \$41,000 in 1987.⁷⁷

Farm equipment dealers have consolidated as well as independent dealers have been swallowed up into larger operations. In 2011, 43 dealerships in the U.S. and Canada operated ten or more store locations; in 2019, that number had grown to almost 90. Ag Equipment Intelligence releases an annual “Big Dealer Report,” which defines a “big dealer” as a dealership group operating five or more store locations; this number has grown from 171 in 2011 to 187 in 2019.⁷⁸ As large dealership groups expand, independently owned locations close.

Consolidation in these markets is an immediate concern for farmers who now have to travel farther and pay more for equipment purchases or repairs, but there are larger concerns as well, including farmers’ basic rights to repair their own equipment and questions about ownership of agricultural data. These will be explored in a later section.

Corporate Farmland Ownership and Land Grabs

As corporations have tightened control over data, inputs such as seeds, and market access, they have also increasingly invested in land itself. While some of these are agribusinesses, there is a major interest in farmland investment by large financial

companies and institutions. In the global south, foreign land purchases rose by 200 percent in the year following the 2008 food price crisis.⁷⁹ Since the stock market plunge and the Great Recession, financiers in search of new sources of speculative investment and hedges against inflation and the stock market have been pouring money into land in the U.S. It is difficult to know exactly how much farmland is investor-owned, but it is likely in the range of 5-7 percent of the U.S. total.⁸⁰

With land seen as inflation-resistant and stable, some investors turn to farmland as a hedge against inflation⁸¹ and volatility⁸², or to diversify their portfolios.⁸³ But recently, large financial companies and institutions are looking at farmland as a lucrative asset class. They see that a changing climate and growing demand for food are creating the conditions for land and water scarcity both globally and in the U.S., and they are racing to acquire fertile land with secure water rights as a way to profit off of that future scarcity.⁸⁴

“Land grabs,” where a government or corporation simply takes land from its original owner or steward with little to no negotiation or payment, have a long history around the world and remain a serious threat to many communities in resource-rich global south countries. This new wave of farmland investment is similar but more subtle. Investors are individuals, corporations, equity funds, pension funds, university endowments, and others, and are both U.S.-based and foreign; their capital is more important than their address. These are some of the biggest players in the financial sector and can be patient with their investments. They are also conservative regarding financial and reputational risk, so they prefer to buy land in countries and regions with more developed land markets, such as North America, Eastern Europe, and Brazil.⁸⁵

However, many investments by these financial titans have similar ecological, legal, and human rights concerns as more traditional land grabs. TIAA, the retirement fund manager with almost \$1 trillion in assets under management,⁸⁶ is the largest land investor in the world, with holdings from Brazil to Illinois and beyond. In Brazil, it is tied to increasing deforestation and possible human rights abuses,⁸⁷ and the Brazilian government believes that the company has violated the country’s law limiting foreign ownership of farmland, potentially putting hundreds of thousands of acres worth hundreds of millions of dollars in jeopardy.⁸⁸ TIAA’s U.S. holdings total over one third of a million acres.⁸⁹ Harvard Management Company (HMC), which manages Harvard University’s endowment, is another major investor. In a stark and expensive illustration of the questionable practices of these investments, HMC lost \$270 million when the Brazilian government confiscated its title to a tract of Brazilian farmland, because the land had been acquired illegally.⁹⁰ Overall, Harvard’s endowment lost \$1 billion in 2018 on investments in farmland, timber, and other natural resources that turned out to be overvalued and connected to fraud and theft.⁹¹

Just as TIAA, Harvard, and other U.S. companies invest in agricultural land overseas, foreign governments, multinational corporations, and investors are doing the same in the U.S. According to the USDA, almost 32 million acres, accounting for 2.5 percent of all privately-held farmland and 1 percent of all land in the U.S., is held by foreigners⁹²

– one-third more than ten years ago.⁹³ Maine and Texas have the most foreign ownership and investment, at about 3 million acres each, followed by Alabama, Washington, and Michigan.⁹⁴ Investors are targeting California for almonds and wine grapes,⁹⁵ the Midwest for corn and soybeans,⁹⁶ and the Mississippi Delta for fruit and vegetable production.⁹⁷

The Delta is seeing some of the most aggressive investment activity in the country, which is concerning given the long history of theft of Black-held land in the region. For example, TIAA owns at least 80,000 acres in Mississippi, which is as much or more than all of the remaining African-American-held farmland in the state. While there is not yet evidence that TIAA or other investors have bought land that was stolen or otherwise illegally acquired, given the widespread historical theft of Black land, it is undeniable that investors are benefitting from the discrimination, fraud, and physical violence that pushed Black farmers off their land.⁹⁸

Investors are not farmers, but they can direct the farm activities on the land they own and profit from those activities, like the sale of crops. The farmers leasing the land, sometimes on land that they had previously owned, must follow the landlord's direction on what and how to plant. Some corporate farmland investors and managers do have environmental policies, but they do far too little, have no independent monitoring, and do not alter the chemical, monocrop agribusiness model that scientific research is increasingly finding is not a viable way to produce food in the face of growing threat of climate change. Many investors see additional profits to be made on land through energy production. Timber and renewable energy companies are the two largest groups of foreign land investors.^{99, 100} Tax incentives and loan guarantees for biofuel production, hydraulic fracturing ("fracking"), and solar and wind generation can make a land investment even more lucrative.¹⁰¹

Land investors are also looking to the potential of soil carbon markets as another lucrative opportunity.¹⁰² Policymakers are increasingly exploring issuing soil carbon credits to farmers who implement certain farming practices like cover cropping which can improve soil health and sequester carbon, and who can then sell those credits to companies looking to offset their own emissions. While advocates see carbon markets as a way to pay farmers to sequester carbon, there are a number of concerns related to soil carbon markets. First, soil carbon can be difficult to measure and doesn't always stay in the soil. Second, the prices of these credits can fluctuate, which puts farmers in a difficult situation since they need to rely on predictable income. Finally, analysts are concerned that carbon markets can undercut already existing programs and that carbon markets are best suited for large-scale corporate farms.¹⁰³ There is serious concern that the establishment of carbon markets could lead to increased speculation in farmland.¹⁰⁴

In the U.S., nearly 20 states have laws limiting either corporate¹⁰⁵ or foreign ownership¹⁰⁶ of farmland, though some of these, not surprisingly, have exemptions for large-scale agriculture, including feedlots.¹⁰⁷ The concern with foreign ownership being that in most cases, the ownership group are a particularly large corporations (small and even medium sized farmers would not be likely candidates to buy farmland in a

foreign country). Additionally, the federal government requires reporting on foreign-owned farmland, but the laws can be confusing, and the reports are not public.¹⁰⁸ Some additional states are currently exploring passing these kinds of laws, but others are doing the opposite: in 2013, a hastily passed Missouri law amended that state's ban on foreign farmland ownership to allow for foreign ownership of up to 1 percent of the state's land. The move, like so many by farm state legislatures, turned out to be in service of multinational agribusiness. Just months after the vote, Smithfield Foods, which had significant land holdings in the state, was sold to the Chinese Shuanghui International (now WH Group). The change in the law, which was spearheaded by recipients of Smithfield political donations,¹⁰⁹ meant that ownership of Smithfield's 40,000 Missouri acres could transfer seamlessly to its new foreign owners.¹¹⁰ Across the country, a total of 146,000 acres transferred as a result of the Smithfield sale.¹¹¹



Impacts: What this Consolidation Means for Farmers and Communities

The transition to an industrialized and consolidated agricultural system has had myriad consequences. We focus here on the impact on farmers and their rural communities and environment. In all cases, increased concentration has come with a huge cost.

Farmers find their options constrained on all sides, forcing them into choices they might not otherwise make on issues such as how they manage their land or what they pay their workers. Concentrated markets have also forced farmers to specialize and entrenched the use of technology, driving reliance on industrialized practices from CAFOs to data-driven precision agriculture. As the number of farmers has declined and vertically integrated farm corporations have grown, both farm and Main Street businesses in rural communities have shuttered as well. Downtowns have all but died in many communities and chain stores now dominate rural landscapes, further extracting wealth from the region.

An industrialized system controlled by few multinational firms has also transformed agriculture from a closed-loop ecosystem to a linear system dependent on fossil fuel-based inputs. The system's output have turned agriculture into one of the top contributors to climate change, water pollution, and biodiversity loss, as well as a major public health hazard.

Farmers and Rural Communities

Consolidation, not just of farms, but across the agricultural sector, as spelled out in the previous section, has driven farmers off the land and shrunk rural communities. A food chain controlled by small groups of large corporations changed the locus of decision-making and financial reward in the food system,¹¹² from the widespread public sector, including governments and farmers' kitchen tables, to the consolidated and private realm of corporation boardrooms.¹¹³ The concentration of decision-making and resources in the hands of just a few actors at the top has squeezed everyone else along the food chain.

High Input Prices, Low Farm Costs

Farming is financially perilous, but the current levels of concentration has made it even more so. Costs have increased – for land, machinery, seeds, pesticides and so on – as the number of companies controlling those inputs have shrunk. Since 1999, for example, the cost of soybean seed has more than doubled and corn seed has tripled.¹¹⁴ Seed companies maintain that the increase reflects their investment in research and development of new seed varieties and traits that improve yield, but the value of genetically modified and other specialized seeds has not translated into either consistently higher yields or overall higher margins for farmers.¹¹⁵ On the contrary, two decades of increased use of herbicides in tandem with herbicide-resistant seed has bred herbicide-resistant “superweeds,” leading farmers to spend more on additional chemicals, which are increasingly toxic as well.¹¹⁶

Institutional and corporate land investments are a major factor driving up the cost of farmland,¹¹⁷ which nearly doubled in value from 2005 to 2019.¹¹⁸ In that same time period, 93 million acres changed hands,¹¹⁹ with 23 percent sold to a non-relative.

These trends are expected to continue: 40 percent of farm and ranch acres in the 48 contiguous states are expected to change hands from 2015 to 2035 as an aging farmer population retires.¹²⁰ These trends are troubling, as the high prices have made land inaccessible for new and beginning farmers just at a moment of major farmland transfer and need for many more young farmers.

Larger-scale farmers can take advantage of economies of scale, and have gained labor and cost savings from technology. But overall, specialized and technology-dependent agriculture has led farmers to replace management and inputs formerly produced on the farm with capital-intensive inputs from off the farm. Instead of saving their own seed, they buy seeds genetically engineered to tolerate herbicides; instead of grazing dairy cattle, they purchase formulated feed for cattle in confinement. Not only does the shift to outside inputs change the environmental impact of farming, as we will explore in the next section, but it has changed the financial costs. Farmers formerly invested time in their farm to build future value (by saving seed, for instance); now they instead invest money in high-priced inputs from a shrinking number of suppliers, increasing their costs of operation.

Prices, though, have dropped as the number of processors and buyers has dwindled. Farmers have responded to these low prices for selling their product by increasing their volume, hoping that they can make ends meet by selling more even at a low price. For an individual farm, that may work, but if every farm operates this way, then the increased supply only contributes to more downward pressure on prices. This has left farmers squeezed from all sides.

Livestock

It is a similar story for livestock farmers. The price of hog feed is up one-third from 1999 to 2019, with total operating costs for hog farmers nearly doubling in that time.¹²¹ Farmers who want to contract with a meatpacker to raise poultry or hogs will be on the hook for nearly \$1 million to build barns to house the animals¹²²; farmers agree to the arrangement with the promise of a long-term contract and guaranteed returns, but especially in the poultry industry, many growers find the contract terms leave them with insecure income and deep in debt.¹²³

Even as their input costs soar, the prices farmers receive for their goods are falling. A farmer used to take livestock to a local auction house, where numerous potential buyers would bid against each other for the sale. The competition kept prices at a fair market value. Today, most livestock auctions have closed, and many regions now only have one or two buyers of a given commodity. With little to no open cash market, farmers are forced to take whatever price the buyer offers. Most livestock farmers now sell their goods through a contract with a large meatpacking company. In the hog market, only 2 percent of hogs are still sold on the cash market,¹²⁴ giving the pork packing companies near total control in setting prices.

In the dairy industry, years of prices well below farmers' costs of production have led to a wave of farmers exiting the business -- and even an increase in farmer

suicides.¹²⁵ These low prices are caused by several factors, including oversupply of milk on the market, a shrinking number of processors, and the growing control of dairy cooperatives over the market. As the number of dairy farms declined by more than one-third in the last decade,¹²⁶ the size of those remaining and the amount of milk they produce continues to grow, and that increasing volume of milk is increasingly being bottled and turned into butter, cheese, and dry milk powder by just a few mega-processors.

The perishability of their product has always made dairy farmers vulnerable to demands of processors, and they have long organized into cooperatives for a stronger negotiating position. But today, more than one-third of dairy cooperatives also own processing facilities,¹²⁷ making them both the buyer and seller of farmer members' milk. Dairy cooperatives are supposed to negotiate with processors to get the best possible price for their members' milk, but when the coop is also buying milk for its own processing facilities, its motivation may shift instead to buying milk at the lowest price, which essentially undercuts its own farmers.¹²⁸ In the late 2000s, farmers filed two class action lawsuits against Dairy Farmers of America (DFA), the nation's largest dairy cooperative, and processor Dean Foods, claiming that the two had conspired to keep milk prices low. The suits were settled out of court, with neither company admitting wrongdoing,¹²⁹ but farmer mistrust of coops remains. Indeed, a 2019 Government Accountability Office report found that consolidation can affect farmers' control of dairy cooperatives and that cooperatives' investments in dairy processing can affect farmer earnings.¹³⁰

Loss of farmer autonomy: contracts

In addition to squeezing farm finances, consolidated markets constrain farmer choices in real ways.¹³¹ The clearest example of this is the contracts and licensing agreements that now control most agricultural markets. There are two primary kinds of contracts: Marketing contracts specify how much of a commodity a processor will buy from a farmer at what price, determined with a formula based on cash market prices; and production contracts, under which the processor retains full ownership of the animals and contracts with the farmer to raise them according to strict specifications.¹³² Most crops, dairy, and cattle are sold under marketing contracts, while production contracts are widely used in hogs and poultry.¹³³ Production contracts are the more restrictive of the two, but marketing contracts (such as the forward contracts discussed in the previous section) also lock farmers into terms over which they have little control, and, having all but replaced the cash market, severely limit farmers' ability to market their goods in an open and competitive marketplace.

In 2017, 21 percent of the value of crop production and 49 percent of the value of livestock production was raised under some kind of contract,¹³⁴ including 69 percent of hogs¹³⁵ and 95 percent of broiler chickens raised on production contracts.¹³⁶ In 1992, just 3 percent of hog operations were raised under a contract.¹³⁷ Just 10 percent of beef cattle are raised under contract today, but there are market indications that the industry is trying to grow that share.¹³⁸

Production contracts allow the farmer virtually no control over how they run their farm, as the company supplies feed, medicine, and other inputs. The farmer owns the farm and must make large investments in infrastructure as demanded by the company, beginning with barns that can cost at least \$1 million.¹³⁹ While the companies tout high returns on investment for the growers, these contracts – especially for broiler chickens – are generally short-term and opaque, and many contract poultry growers live below the poverty line.¹⁴⁰

Purchase of inputs, too, is governed by restrictive licensing agreements, particularly for seed and machinery. Farmers have been saving seeds and repairing their own equipment for millennia; today, they can be sued for breach of contract for continuing these practices. To protect the intellectual property of patented genetically modified seed, seed companies require farmers to agree not to save it for replanting. Former seed giant Monsanto, now absorbed into seed and chemical giant Bayer, has famously conducted surveillance on farmers to ensure compliance, and brought legal action against those who it suspected of replanting seeds. Its legal tactics, described as “scorched earth” by one farmer, even included suing non-customers who happened to find errant plants with Monsanto genetics growing in a drainage ditch as well as a small rural grain cooperative.¹⁴¹ Farmers and other small rural businesses could not afford the legal battles, and would often sign agreements or open their records to make the legal attacks stop.

Contracts for tractors and other agricultural equipment are similar, where the operating system software is the protected intellectual property. Licensing agreements stipulate that the farmer does not own the software in the machinery but leases it from the company.¹⁴² Only authorized service centers can diagnose a problem or authorize a repair. The farmer is not permitted to do so. The cost of a repair at an authorized center or in a visit from an authorized technician can be hundreds or thousands of dollars more expensive than at an independent mechanic, along with a potentially costly wait for the technician during the short window of planting or harvesting.¹⁴³

Squeezed by Data

Restrictive license agreements are of note because data collection and aggregation are the new frontier for top agribusiness firms. Agricultural data used to be gathered and housed by USDA and land-grant university extension services and made available for public use; today, data is collected by private companies who keep it proprietary, using it to develop and sell future products.¹⁴⁴ Much like meatpackers use the water and land resources of rural communities to raise animals but keep the profit from meat sales, data collection is similarly extractive. Seed and machinery companies have strict licensing agreements that keep farmers from saving seed or repairing their own tractors, but they require farmers to share an ever-increasing amount of information about their own land and practices.

Monsanto, for instance, has been growing out its data-collection capacity for most of a decade, and the merged Bayer/Monsanto has bought five agricultural software

companies since 2012.¹⁴⁵ The company has a popular smartphone app, developed by Climate Corporation, which Monsanto bought in 2013, that provides real time soil and climate data on all 30 million U.S. farm fields. Monsanto has sold the app to farmers around the world to make data-driven field decisions, increase yields, and conserve water. But the profit from selling the app is just the start. The data it gets from users is hugely valuable, and the company plans to use the data it has collected to target farmers in Africa and Asia to build demand for genetically modified seed and chemical packages.¹⁴⁶

Data-driven farming, overall called “precision agriculture,” has been sold to farmers as a way to improve efficiency, increase yields, and farm more land – the goals of modern production-focused agriculture. The technology relies on global positioning systems (GPS) and allows farmers to monitor soil and crop conditions, and thus be more precise in planting decisions and chemical application. Nearly three-quarters of U.S. corn acres use precision agriculture techniques.¹⁴⁷ For some farmers, it is a boon, allowing them to tailor their inputs to their farm conditions, including reducing chemical use. But growing reliance on big data companies for individual farm management is unlikely to benefit farmers in the long run.

Blocking the Chain, a 2018 ETC Group report on the impact of Big Data in agriculture, observes, “As long as a society is unjust and large corporations pressure for profit, the introduction of a [data] platform technology will almost inevitably strengthen the wealthy and weaken the (already) marginalized.”

Bayer is now piloting a new pricing program for farmers based on its app. The company’s new “outcome-based” pricing offers seeds and chemicals based on a guarantee of performance, like crop yield or weed reduction, rather than a standard flat fee. If the guarantee isn’t met, Bayer will refund part of the cost, but if the product exceeds expectations, Bayer will take a cut of farmers’ profits.¹⁴⁸ The company asserts that the program will help farmers maximize production, but farmers are concerned that the imbalance of power will lead to unfair outcomes.¹⁴⁹ Farmers who participate must provide a great deal of data and follow specific prescriptions from the app. Bayer does not share information about how the outcomes are predicted, and has a clear incentive to under-promise to avoid payouts. This sounds like it could help farmers, providing some assurances for bad years, but it is not clear if the refunds would be sufficient to keep farms afloat when production is down. Considering how tight the margins are for small farms, it is not clear that farms would have profit to spare, even in good years, to pay Bayer the higher costs. And with Bayer controlling the data, farmers have limited ability to challenge their determinations.

Monsanto was in the data-collection game for years, but today Bayer is just one of a wide range of companies investing in and promoting a growing suite of interconnected agricultural technologies, from genetics and seed coatings to drones and field worker robots to blockchains and cryptocurrencies. Amassing more data and better understanding the needs of the farm system through these new tools is becoming an increasingly important way for the major firms to fend off competitors and increase profits.¹⁵⁰

But the ETC Group report concludes that this can only lead to greater concentration, because “no company at any point along the chain can risk allowing others to gain control of more information. Therefore, the tendency for vertical integration along the chain increases.”¹⁵¹ Consolidation is thus occurring between sectors: fertilizer companies are expanding to include seeds and agrochemicals; farm machinery giants have developed alliances with chemical and fertilizer firms; and agrochemical companies are investing in seed coatings and crop nutrients.¹⁵²

Ripple Effects for Rural Economies

The cumulative impact of consolidation on farmers, processors, and others – including low prices and vertical integration that keeps profits in-house – puts downward pressure on rural communities and economies. Profits from a Tyson or Smithfield slaughterhouse mostly go to their corporate headquarters in Arkansas or China, rather than staying in the local economy.¹⁵³ Contract chicken farmers working for a multinational poultry company get their feed and medicine delivered as part of the contract rather than buying these products at the local feed store. One study found that farms with gross income below \$100,000 made nearly 95 percent of their expenditures locally, while farms with gross income above \$900,000 spent less than 20 percent locally.¹⁵⁴ Smaller farms that buy locally have a greater “multiplier effect,” where the dollars they spend in their communities stay local and create more jobs.¹⁵⁵

The research on the trickle-down impact of farm consolidation on rural communities is unambiguous and has been for nearly 80 years. A seminal USDA-funded study of two farming communities by sociologist Walter Goldschmidt in the 1940s found that the community dominated by large-scale farms had greater income inequality and poverty and lower civic participation, while the community of small farms had higher employment, more small businesses, and better public services.¹⁵⁶ Numerous studies since have had similar results: consolidation and industrialization of agriculture operations in rural communities has resulted in lower incomes, greater income inequality and poverty, declining Main Streets and fewer stores.¹⁵⁷ A 2007 meta study examining more than 50 of these studies found negative effects of industrialized farming in 82 percent of them, including greater unemployment, income inequality, and population decline, along with fewer retail stores and less civic participation and democratic involvement. The meta study found few positive impacts of industrialized agriculture across the studies.¹⁵⁸

Today’s rural statistics bear out these findings: On the whole, rural residents are poorer, sicker, and face greater unemployment than their urban counterparts. In 2018, the rural poverty rate was 16 percent, compared to 13 percent in urban areas,¹⁵⁹ with rural median income averaging 25 percent below the urban median since 2007. Most of the counties with the highest participation in the Supplemental Nutrition Assistance Program¹⁶⁰ and most of the nation’s so-called “food deserts” are rural,¹⁶¹ as rural grocery stores have shuttered as populations have declined.¹⁶² Rural areas, particularly those that are majority white, are suffering from health crises including high rates of obesity¹⁶³ and rising death rates,¹⁶⁴ even as nearly a quarter of

rural hospitals are at risk of closure.¹⁶⁵ The opioid epidemic has hit rural areas hard; from 1999 to 2015, rural opioid death rates quadrupled among 18 to 25-year-olds.¹⁶⁶ Though there are many causes, researchers point to the decline of jobs, economic stress, and related anxieties as major factors.¹⁶⁷

Consolidation has also separated rural people from agriculture, clustering agricultural industries in some areas while leaving others altogether. Just 2 percent of the total population are farmers, and only 20 percent of rural counties were dependent on farming even in 2000.¹⁶⁸ This has changed the relationship between the industry and the community.

The agricultural industry around a town used to include diversified family farms, an auction house, grain elevator, feed stores, and processing facilities, owned and managed by members of the community. Today, many rural towns are instead surrounded by vast fields of corn and soybeans, as well as hog and chicken barns, perhaps along with a meatpacking plant. Some or all of these entities are owned and managed by people or companies from outside the community (often a multinational corporation). When a large-scale CAFO or meatpacking plant proposes to locate in a town, the operation promises jobs, and in rural areas with few opportunities, towns are often willing to offer tax breaks in exchange. In practice, the meat industry relies on immigrant labor, often undocumented workers, going so far as to recruit workers directly from their home countries.¹⁶⁹

In many rural communities, especially majority-white towns in farming regions like the Midwest, this has meant a sudden influx of new residents with no attendant contribution to the tax base by the company to pay for the services its workers need. Local tax payments by the workers themselves do not fill the gap, as their wages tend to be low. This dynamic – a town budget stretched thin by an increase in population with no comparable revenue increase by the corporation who brought workers to town – can exacerbate racism and discrimination towards the new workers.¹⁷⁰ As with so much else, it is corporate decisions that change the community, but local residents are left to adapt to and pay for the change. Some rural towns have recognized that the future of aging rural communities lies in new residents and have embraced these changes, but many towns are facing challenges¹⁷¹

Consolidation in other sectors -- including health care, banking, and retail -- has also had a major impact in rural areas. When national retail chains expanded into rural towns in the early 1970s, they drove local stores out of business by offering greater selection and lower prices..¹⁷² Walmart and dollar stores have been particularly significant: in the late 1990s, Walmart began moving into areas offering prices 15-25 percent lower than the national average.¹⁷³ Now, dollar store chains have staked claim in the rural towns and inner-city neighborhoods where Walmart has been less likely to open. More than ten-thousand dollar stores have opened around the country in less than a decade, with Dollar General alone opening three stores a day.¹⁷⁴ Both chains have a practice of opening near existing stores, undercutting their prices, and driving them out of business.¹⁷⁵

Lack of Resiliency

Highly consolidated processing infrastructure not only puts downward pressure on long-term farming prices, but as the Covid-19 pandemic showed, it can cause huge, sudden shocks in prices and supply chains that can last for months. When a single facility processes a significant percentage of product, any problem at that facility causes bottlenecks on both the supply and demand side that ripple throughout the country and even the world. For instance, when the pandemic hit, the beef market was still recovering from the impact of an August 2019 fire at a Kansas Tyson plant that processed 6 percent of all U.S. beef. The plant was offline until December, and the loss of its processing capacity for those months caused disruptions both for cattle farmers and consumers. With unprocessed cattle backed up, cattle prices fell about \$70 per head, while the price of beef at the grocery store rose with such extreme fluctuations that USDA launched an investigation into potential price manipulation by the meatpackers.¹⁷⁶

When COVID hit, consumers were facing shortages in grocery stores at the same time farmers were having to dump their product, because processing facilities were either closed due to health concerns or unable to shift from restaurant supply lines to individual consumers.

Environment

This section details some of the most substantial environmental effects of a corporate-controlled, consolidated, industrialized agricultural system on the climate, water, air, and biodiversity. It also examines the effects on public health more broadly.

Climate

A 2008 study estimated that the diet of every American requires the equivalent of nearly 538 gallons (2,000 liters) of oil per year, including production, processing, packaging, and transportation, accounting for about 19 percent of total U.S. energy use.¹⁷⁷ As a result, direct greenhouse gas emissions from agriculture account for 24 percent of all global emissions,¹⁷⁸ including not only emissions from nitrogen fertilizer manufacture and use, but also those from land use change, transportation, waste, and other aspects.

The impact of consolidation is notable in the example of the livestock sector. Industrial livestock production, one of the most consolidated and technology-dependent aspects of the food system, accounts for 14.5 percent of total global emissions,¹⁷⁹ at 7.1 gigatonnes of carbon dioxide equivalent per year, comparable to the entire global transportation sector.¹⁸⁰

Cattle account for 65 percent of total livestock emissions.¹⁸¹ One dairy cow annually produces over 730 pounds of methane, a greenhouse gas at least 25 times more potent than carbon dioxide.¹⁸² In California, the top U.S. dairy-producing state, dairy

cows account for 45 percent of the state’s methane emissions and 38 percent of its nitrous oxide.¹⁸³ Production and processing of animal feed (including land use change) represents 45 percent of total emissions from agriculture, and manure storage and processing account for 10 percent. Fuel use along supply chains accounts for about 20 percent of the livestock sector’s emissions.¹⁸⁴

And yet, the few meat and dairy companies that publicly report their greenhouse gas emissions tend to underreport and not include their supply chain emissions in their calculations.¹⁸⁵ Accounting for upstream emissions is critical because, as highly vertically integrated businesses, these companies exercise control over their supply chains. As discussed in the previous section, meatpacking giants could mandate that their contract farmers use cleaner waste disposal methods but choose not to; these companies could similarly require emissions-reducing practices all along their supply chain but do not. A 2018 report from GRAIN and the Institute for Agriculture and Trade Policy calculated that when supply chain emissions are included, the top five meat and dairy companies are responsible for more greenhouse gas emissions than ExxonMobil, Shell, or BP.¹⁸⁶ Further, countries that are home to just 15 percent of the world’s population (the U.S. and Canada, the European Union, Brazil, Argentina, Australia, and New Zealand) account for 43 percent of meat and dairy emissions.¹⁸⁷

Once again, the power to change course is concentrated with just a few companies, whose decisions in this case impacts the whole planet. Current global agricultural emissions account for nearly the full 1.5°C emissions allowance called for in the 2015 Paris Climate Agreement.¹⁸⁸ That is, if other sectors cut emissions to reach Paris Agreement targets while meat and dairy companies do nothing or continue to increase production, the livestock sector could take up more than 80 percent of the global emissions budget.¹⁸⁹ That seems to be exactly their plan: the biggest meat and dairy companies are currently committed to growth levels that are completely at odds with the targets of the Paris Agreement, touting the rise in global meat consumption as good for shareholders’ bottom line.¹⁹⁰

It does not have to be this way. Farming methods exist that focus on raising fewer animals in ways that support ecosystems, rather than harm them as CAFOs do. These practices include sustainable grazing on naturally existing grasslands, integrating livestock back into farms and using food waste as feed, and limiting production of animal feed (which is extremely emissions-intensive considering the fertilizer, machinery and land required for such production). This would involve a dietary shift for many Americans, but it does not require the elimination of meat and cheese from people’s diet. This “less but better” approach to animal products has potential side benefits for public health and illustrates the challenges and opportunities inherent in climate action.¹⁹¹

Impacts on Water and Air

Pesticides, herbicides, fertilizers, and CAFOs have significant effects on water and air quality. The chemical and livestock industries are highly concentrated, as has been discussed previously, so the activities of just a few of these companies have

tremendous impact on water and air quality across the country. Pesticides and herbicides manufactured by Bayer and ChemChina are found in water from coast to coast. Manure waste from CAFOs, which the meatpackers deem to be the farmers' responsibility while the companies themselves reap the profits, is disposed of by spreading on fields, often in amounts greater than the soil can absorb,¹⁹² with excess nitrate and other compounds ending up in the Gulf of Mexico.

Pesticides

Corporate concentration has contributed to increased use of these chemicals in two ways. First, the small number of companies that dominate agriculture have aligned behind a chemical-heavy form of agriculture that requires extensive use of these products. Just four companies control 70 percent of the global agrochemical market,¹⁹³ while the chemicals they manufacture, many of which are toxic to humans, animals, and plant life even in small concentrations, have far-reaching effects. Pesticides and herbicides flow off fields into waterways, where some of them can remain for decades or longer. A 2017 U.S. Geological Survey study found five or more pesticides in 88 percent of water samples, with many of the pesticides exceeding advised toxicity levels for fish and invertebrates.¹⁹⁴ A 2018 study found 180 pesticides and their by-products in small streams in 11 Midwestern states, with an average of 52 pesticide compounds identified in each stream.¹⁹⁵

Additionally, corporate agribusiness has flexed its political power to limit state and federal regulations. The U.S. regulatory process for them is driven largely by cost-benefit analyses that place a monetary value on disease or shortened life weighed against the financial benefits of continued use of a chemical. The chemical industry has a great deal of input in these decisions.¹⁹⁶ Enforcement generally depends on voluntary self-monitoring and reporting by manufacturers. In contrast, the European Union tends to take a precautionary approach to environmental risks, choosing to ban a chemical when its impacts are uncertain.¹⁹⁷ Overall, the U.S. permits the use of 85 pesticides that have been banned or are being phased out for health or environmental concerns in the European Union, China, or Brazil.¹⁹⁸

The example of atrazine, the second-most common herbicide in the U.S., after glyphosate (used in Monsanto/Bayer's RoundUp), is illustrative. Atrazine is a weedkiller used on corn, made primarily by Syngenta (now owned by ChemChina). It is one of the most common contaminants of U.S. drinking water, found in the tap water of an estimated nearly 30 million Americans.¹⁹⁹ The chemical is an endocrine disrupter, associated with birth defects and some cancers in humans²⁰⁰; reproductive abnormalities in aquatic life, including hermaphroditism in frogs²⁰¹; and negative effects on plants and other wildlife. Evidence of these effects began to be reported in the late 1990s. In response to the findings, Syngenta threatened the scientists and mounted a campaign to discredit them and their research.²⁰²

The U.S. Environmental Protection Agency (EPA) has held multiple hearings on the safety of atrazine, and each time the agency has declined to ban the chemical. At a 2012 hearing, EPA excluded from consideration most of the 75 studies that had

been published to that point linking atrazine with human birth defects and endocrine disruption, and instead relied on a set of studies funded by Syngenta. In a follow-up paper rebutting the decision, the authors – over a dozen independent scientists, including two who had served on the EPA panel – wrote, “the single best predictor of whether or not the herbicide atrazine had a significant effect in a study was the funding source.”²⁰³ A 2019 decision by the Trump EPA allowed a 50 percent increase in the levels of atrazine considered safe in waterways.

Livestock Industry

As discussed above, the CAFO system is controlled by the large meatpackers, who exercise power over their supply chain, including setting standards for barns, feed, and waste management by the farmers who grow their animals. The growers’ contracts specify that the growers themselves are responsible for the animals’ waste. Exact estimates of the volume of CAFO waste are difficult since it is not tracked by any federal or state body, but a 2020 Food and Water Watch report estimates that industrially-raised livestock and poultry produced nearly 442.5 million tons of manure, which is not treated, as human waste is, before disposal.²⁰⁴ Manure is rich in nitrogen and phosphorus, and an essential plant nutrient, so the meat industry touts the waste as a valuable fertilizer, but it is often applied to fields in amounts far greater than the soil can absorb. Leaks or spills from storage ponds are also common. Along with nitrates and phosphates, CAFO waste can contain antibiotic residues, animal parts, bacterial pathogens like *E. coli* and staph,²⁰⁵ and other chemicals.²⁰⁶ All of these wash into surface and ground water, contaminating wells, rivers, and eventually the ocean.

Nitrates and phosphates are the most widespread agricultural pollutants, and fertilizers, including animal manure, are the largest contributor of these nutrients to water systems.²⁰⁷ More than 10 million tons of nitrogen and nearly 2 million tons of phosphorus are applied each year as commercial fertilizer, nearly all of it on agricultural land.²⁰⁸ Nitrogen pollution from livestock manure increased nearly 50 percent from 1930 to 2012.²⁰⁹

The legal limit of nitrate in public water systems is 10 parts per million (ppm). Levels higher than that can cause “blue baby syndrome,” a potentially fatal condition for infants, and studies have shown increased rates of cancers and birth defects at concentrations of just 5 ppm.²¹⁰ Nitrogen and phosphorus both accelerate algae growth; large algal blooms produce methane, another potent greenhouse gas, and consume oxygen, leading to a so-called “dead zone,” where fish and other life cannot survive.²¹¹ The area of oceanic dead zones increased by one-third between 1995 and 2007,²¹² including an annual dead zone in the Gulf of Mexico with an average size close to that of Connecticut.²¹³ Nearly half of all rivers and streams and one-fifth of coastal and Great Lakes waters are classified as “in poor biological condition,” while another one-fifth of lakes have excess algae and other plant growth, due primarily to nitrogen and phosphorus. The EPA identifies agriculture as the most common source of pollution in rivers and streams.²¹⁴

Odors and dust from CAFOs and pesticide drift from crop farms have serious environmental impacts as well. The odor from hog and poultry barns can be overwhelming, leading to reduced property values and depressed tourism.²¹⁵ Antibiotic-resistant bacteria can travel on dust particles from CAFOs into the surrounding community.²¹⁶ People living near hog farms have elevated rates of asthma, headaches and nausea, kidney disease, and anemia, as well as higher infant mortality and lower life expectancy.²¹⁷ In regions where animal waste is sprayed onto fields rather than spread, *E. coli*, *Clostridium*, and fecal coliform bacteria have been found inside the refrigerators of neighbors.²¹⁸

A proposal for a new or expanding livestock operation often pits rural neighbors against each other, as neighbors do not want to live with the water and air pollution created by thousands of animals, while the CAFO operator wants to make a living. For many young farmers, getting a contract to raise hogs for a large pork company represents the only way they can see to return to their family's farm.²¹⁹ But these opportunities and fights are ultimately the result of a highly concentrated market, where investment in heavily polluting livestock operations are the only way for families to stay in agriculture, or, according to the meat companies, the only way to feed the world.

Biodiversity

Agriculture is not an inherently polluting activity – on the contrary, when practiced as part of an ecosystem, farming can improve soil, store carbon, and clean water. Humans survived for millennia by learning to farm in concert with nature (and many millions still do). Food producers learned how to use the complex relationships between microbes, fungi, insects, pollinators, and plants to grow larger harvests, prevent pests, and breed for disease and drought resistance. They knew that crop rotations increased yields and companion planting repelled pests or produced larger fruit by attracting the right pollinators. Today, the science of agroecology provides a deeper understanding of these ecosystem-based practices, showing that biodiversity is key to sustainably productive agriculture.²²⁰

In contrast, U.S. agriculture for the last 70 years has followed a linear, input-based model promoted by agribusiness companies and the government for an increasingly standardized and globalized market. Seed and chemical companies engineer seeds so that they can be used with existing agrochemicals, while meatpackers breed animals for uniformity and rapid growth. The decisions they make and the products they sell have huge consequences for biodiversity.

In the last generation, even the balance of commodity crops planted in the U.S. has shifted, as soybeans, formerly a little-planted crop, have overtaken wheat, cotton, and small grains like barley and oats. This change was driven in large part by the livestock industry, as soybeans are an efficient animal feed for animals raised in confinement, as well as by dramatic growth in Chinese soy demand.²²¹ Wheat, the most-planted U.S. crop as recently as 1990, has fallen out of favor due to pressures from a consolidated market, including lack of GMO varieties that large-scale growers

expect; lack of utility as animal feed, which eliminates the meatpacker market; and competition from international growers who can produce the crop more cheaply. Overall, out of 6,000 plant species cultivated for food, fewer than 200 contribute substantially to global food output, and only 9 species account for 66 percent of total crop production.²²² Livestock production, similarly, is based on about 40 animal species, with only a handful providing the vast majority of meat, milk and eggs. Of the 7,745 livestock breeds, 26 percent are at risk of extinction.²²³ These increasingly uncommon species are not only important to local diets and culture, they could also hold important genetic keys for traits like pest or drought resistance, adaptability to a changing climate, better nutritional value, or other attributes.

That said, many of these plant and animal species, including wild varieties, have been cultivated by small-scale farmers and indigenous peoples, who are themselves at great risk. As these communities are pushed from their land (often by large-scale agricultural projects), valuable agricultural knowledge is also lost. Conservation of species and ecosystems must include these communities.²²⁴

The drive for standardized products and intensive cultivation by the largest market players has impacted biodiversity in even more dramatic ways through manipulation of the environment, including changing water patterns, clearing forests and hedgerows, monocropped fields, and reliance on chemical fertilizers and pesticides. A 2019 United Nations report found dramatic declines in the birds, bats, and insect species that contribute to pest and disease control and pollination, and threats to soil biodiversity around the world. Forests, rangelands, mangroves, seagrass meadows, coral reefs and wetlands – key ecosystems that deliver numerous services essential to food and agriculture and are home to countless species – are also rapidly declining.²²⁵ In the last 30 years, a stunning 76 percent of the biomass of insects has disappeared, with 40 percent of insect species now threatened with extinction.²²⁶ Changes in land and water use have led to these biodiversity declines. Urbanization and the industrialization of farming practices have caused these changes. Ultimately, the top global agribusinesses are increasingly driving crop production, growing methods and markets.

Public Health

Finally, the Covid-19 pandemic has exposed some of the public health risks of the highly consolidated food system. Evolutionary biologist Rob Wallace points directly to the demands of agribusiness as the cause, along with the global capital that backs the system. A concentrated multinational food system creates conditions ripe for diseases to emerge and spread, including through land grabs that lead to deforestation -- a major factor in the emergence of new diseases. Smallholder farmers are pushed aside and into fragile lands or into cities, sometimes turning to trade in wildlife meat. Wildlife is forced into increasing interactions with humans, which also increases the risk of diseases jumping species. Finally, the industrialization of agriculture, including high-density monocultures of genetically similar animals and plants, leaves huge swaths vulnerable to the same diseases or pests. “You couldn’t design a better system to breed deadly diseases,” says Wallace.²²⁷

COVID-19 appears to have originated from the causes described above, but Wallace and other public health experts have warned for years that industrial livestock operations are the ideal breeding ground for a similar pandemic-causing pathogen. The widespread use of antibiotics in CAFOs, both for growth promotion and disease prevention, is of particular concern. Some estimates hold that as much as 80 percent of medically important antibiotics in the U.S. are sold for use in food-producing animals.²²⁸ This number is down nearly 40 percent in the U.S. from a 2015 peak,²²⁹ but these drugs are still in widespread use and growing globally. The continued growth and spread of antibiotic-resistant bacteria could lead to a “post-antibiotic” future, when the antibiotics we rely on today are no longer effective, turning something easily treatable today like an ear infection or strep throat into a deadly illness.²³⁰ A similar scenario is playing out on industrial crop farms, where widespread use of fungicides to treat crop disease has been linked to a surge in drug-resistant fungal infections in hospital patients and others.²³¹

Already, bacteria resistant to medically-important antibiotics are relatively common in and around CAFOs, and have transferred from animals to humans.²³² Bacteria do not stay contained on the farm, and are instead carried into the surrounding community on the wind,²³³ in manure runoff, on insects,²³⁴ farmers, and workers.²³⁵ MRSA, an antibiotic-resistant staph bacteria, has been found in the nasal passages of hog CAFO workers, even after two weeks away from the operation.²³⁶ Alarming, this bacterial spread is extremely difficult for scientists to track, mostly due to a lack of access to data. The contracts between meat companies and their livestock growers commonly restrict anyone the company considers a “non-essential” visitor to the farm due to biosecurity concerns, limiting researchers’ ability to trace disease spread.²³⁷ As in the Covid-19 pandemic, the meat industry has the power to make decisions for its own bottom line that have widespread impacts on public health.

In addition to the risk of diseases emerging and spreading through a highly concentrated food system (also starkly shown by the spread of Covid-19 among tightly packed meatpacking plant workers), such a system poses many other public health risks. In 2019, the American Public Health Association called for a moratorium on all new and expanding CAFOs,²³⁸ citing respiratory illnesses, water and air pollution, and other health hazards that come with living near these operations. In many regions, the effects are disproportionately concentrated in minority communities, pointing to the public health threat posed by environmental injustice as well. One North Carolina study found that people of color are 150 percent more likely to live within three miles of an industrial hog CAFO than white people.²³⁹

Finally, the highly consolidated food system produces a mind-boggling array of inexpensive, highly processed, shelf-stable products that create an illusion of variety and choice from very few ingredients. Most supermarket items are made from various combinations of corn and soybeans, from bread to salad dressing to soda. Even the meat and dairy come from grain-fed animals.²⁴⁰ The so-called Western diet, created and disseminated by large agribusiness corporations, has changed eating patterns, first in the U.S., and then in countries around the world. Preventable diet-related diseases have spiked as a result, including heart disease, diabetes, strokes,

and even some cancers. In the U.S., diet-related diseases cost \$50 billion a year in health care costs.²⁴¹ However, the food industry is heavily invested in maintaining the status quo. For example, despite agreement by health experts that healthy diets include less meat, advice by the government suggesting meat reduction or vegetarian diets is condemned by the meat industry and their allies in state²⁴² and federal governments.²⁴³



The Growth of Agribusiness Power

The effects of the highly consolidated agricultural system on farmers, rural economies, climate, and the environment are the result of past and current political and economic decisions.

Across the economy, monopolistic and oligopolistic companies have translated their economic power into political influence, successfully pushing for laws and regulations that further entrench their position and transfer wealth upwards.²⁴⁴ In effect, powerful corporations have created a structure for writing their own laws and regulations to further build their power.

The largest multinational agribusiness corporations, including Bayer, Smithfield (WH Group), grain dealer ADM, and others, spend millions of dollars in direct lobbying and political donations. In an ironic and nearly Orwellian twist, the very corporations that control the lives of farmers have managed to style themselves as the “farm lobby.” These agribusiness lobbyists, trade associations, and even non-profit organizations have a great deal of clout in Washington, D.C., and in state capitals. Though the interests of these entities are often in direct opposition to what is good for actual farmers, the farm lobby has been remarkably successful at using those farmers as a front to push their agenda. The American Farm Bureau Federation (AFBF, known simply as the Farm Bureau) and commodity trade groups like the National Cattlemen’s Beef Association and National Pork Producers Council are powerful representatives of the farm lobby.

As the largest farmer organization in the country, the 100-year-old Farm Bureau calls itself “The Voice of Agriculture.” There are state-level Farm Bureau organizations in all 50 states and Puerto Rico, and 2,800 county-level offices.²⁴⁵ All told, the group claims 6 million members, which is surprising when there are only 2 million farmers in the United States. In fact, Farm Bureau’s primary business is selling insurance, through FBL Financial Group, a multi-million-dollar company traded on the S&P 500, with stock investments in companies like Cargill, ConAgra, Dow Chemical, DuPont, Tyson and Archer Daniels Midland.²⁴⁶ In most states, membership in the organization is required to purchase the insurance and access many other discounts and benefits; thus many of the 6 million members are insurance customers, not farmers.

AFBF employs nearly 20 lobbyists in Washington, D.C., and in 2019 spent \$3.2 million on lobbying.²⁴⁷ When combined with lobbying expenditures by the 18 state Farm Bureau affiliates with registered lobbyists in Washington, 2019 lobbying expenditures totaled nearly \$8 million.²⁴⁸ In farm states, the Farm Bureau grooms political candidates (mostly Republicans), effectively dictates outcomes of state elections and appointments to powerful agriculture committees, and heavily influences which bills become law and how agricultural regulations are written.²⁴⁹

It regularly weighs in on issues that have little to do with agriculture, as in its vocal 2010 opposition to what became the Affordable Care Act, especially the prospect of a public option,²⁵⁰ even though a public option would have allowed many more farmers to access health care. The group also opposed the 1965 Voting Rights Act and a 1997 bill aimed at correcting longstanding USDA discrimination against minority farmers.²⁵¹

The Farm Bureau is not the only group to claim to represent family farmers while instead supporting big business. Almost two dozen commodities have a research and promotion board,²⁵² whose stated goal is to support producers with both new techniques and market expansion efforts. The boards are funded by a mandatory tax paid by farmers, called a checkoff, for every animal or pound of raw goods they sell. The boards are known for their product promotion: slogans like “Beef. It’s what’s for dinner,” “Pork: the other white meat,” and the milk mustache were all checkoff-funded campaigns. Checkoff funds are not supposed to be used for political activity, but

many research and promotion boards have strong financial connections with trade groups that do lobby for federal and state laws.^{253 254}

These groups, including the National Pork Producers Council and National Cattlemen’s Beef Association, represent interests of large meatpackers, which are frequently in direct opposition to the interests of the small farmers and ranchers who pay the checkoff fees.²⁵⁵ Farmers, for instance, have long advocated for mandatory country of origin labeling and stronger regulations for contract farmers to protect against abuses by big meatpackers. The commodity groups have fought these measures for decades.²⁵⁶

The National Pork Producers Council (NPPC), for instance, successfully sued the U.S. Environmental Protection Agency (EPA) in 2012 to weaken its reporting requirements for new CAFOs,²⁵⁷ which had provided information to state and federal governments about each operation and allowed the EPA to set and monitor pollution limits.²⁵⁸ The rule change exempted nearly all CAFOs, so that that most operations do not need to register or provide any information to the federal government, and only must do so with state authorities if the state requires it – which many major farm states do not. Poultry trade groups,²⁵⁹ NPPC, American Farm Bureau Federation, and National Cattlemen’s Beef Association²⁶⁰ were involved in a similar lawsuit and subsequent successful lobbying effort over the last decade to exempt CAFOs from all air pollution reporting requirements as well.²⁶¹ In this case, Congress passed a new law to extend the exemption nationally.²⁶² The senator who introduced the legislation had received more than \$230,000 from agribusiness PACs in the previous two years.²⁶³

In another area, a broad coalition of farm, processing, and grocery industry groups came together to oppose clear labeling for genetically modified products. Several states held ballot initiatives in the early 2010s mandating that foods containing genetically modified ingredients be clearly labeled, and the industry-funded Coalition for Safe Affordable Food spent millions of dollars to defeat the measures. Saying they wanted to prevent a “patchwork of state laws”²⁶⁴ that would be confusing for consumers and costly to manufacturers, the industry pushed for a federal law to prevent the state efforts that were about to go into effect. The first of these bills was introduced by then-Congressman Mike Pompeo (R-KS); General Mills was the second largest single contributor to his campaign committee.²⁶⁵ The eventual compromise bill was widely considered a win for the industry. Nearly 125 groups registered to lobby for the bill, most of them industry groups like the Grocery Manufacturers Association, PepsiCo, and Monsanto.²⁶⁶

In a move related to its 2010 hearings on agricultural antitrust issues, the Obama administration released a proposed rule to protect livestock farmers from abuses by the meatpackers they contract with called the Grain Inspection Packers and Stockyards Administration (GIPSA) rule. After an all-out pressure campaign by the meat industry on both the USDA and Congress, costing almost \$7.8 million in 2010 lobbying,²⁶⁷ the rule, which contained almost none of the protections of the original, was finalized in the last days of the Obama administration in 2016, six years after it was introduced.²⁶⁸ It didn’t take effect until the early days of the Trump

administration, and Trump essentially started the process over, adopting a new industry-supported version of the rule in 2020.²⁶⁹

Many states specifically exempt CAFOs and other large-scale farm operations from environmental and other regulations governing other industries, and offer tax exemptions for many farm products and services. Some of these, like exemptions on animal feed or manure storage, exclusively benefit CAFOs, others benefit all farms but have greater advantage for larger operations: the tax savings is greater on 4,000 cows than 40.



Conclusion: A New Way Forward

Agriculture in the U.S. is currently facing multiple intersecting crisis: climate, the ongoing collapse of family farms, and economic devastation in rural communities. While some progress could be made by addressing any or all these multifaceted issues with specific policy interventions, the fact is that they are symptoms of the same, much larger crisis. Agriculture in the U.S. is broken at a fundamental level, and a key reason is continued corporate consolidation. A consolidated farm and food system has accelerated environmental destruction, including pushing us closer to climate catastrophe, left family farmers vulnerable to economic devastation, and undermined rural communities. We should not expect to truly address the climate

crisis, clean the water and air, and revitalize rural economies without addressing the core issue of corporate consolidation and control.

Stopping Corporate Control

Stopping the ongoing consolidation is a necessary first step to fixing our food system. Consolidated agribusiness power has undermined climate action, squeezed family farmers and rural communities, and failed to actually ensure the right to food for millions in the United States alone. The U.S. agriculture system is a major contributor to the climate crisis; its past time to start thinking about big agribusiness in the same way we think of major fossil fuel companies -- and tackling this issue. And as agribusiness power has consolidated, family farmers and rural communities have been pushed closer to the economic brink. Stopping agribusiness consolidation and shifting power away from the handful of corporations is a prerequisite to addressing all these issues.

To begin untangling the consolidated mass that is corporate agribusiness, an immediate moratorium on agribusiness mergers and on all mergers and acquisitions for agribusiness companies is needed. The Food and Agribusiness Merger Moratorium and Antitrust Review Act, last introduced in 2019 by Senator Corey Booker, would be an excellent first step. The moratorium would allow time for new, stricter procedures for mergers and acquisitions to be developed to prevent the kind of consolidation we have seen. Finally, the government must go to work to roll back existing corporate consolidation and give space for the development of a resilient, localized, and distributive food system.

Invest in Family Farmers and a Resilient Food System

While stopping corporate consolidation will ultimately be necessary to adequately address the crisis in our food system, there are some steps the government can and must take to implement programs that can offer family farmers resources and support. Family farmers are the cornerstone of a resilient and just food system; their success must be a top priority. Supporting the next generation of farmers, at a time when so many of our current farmers are retiring, is crucial. One policy objective that would help these farmers get their start is ensuring them access to land. Developing a land trust that would provide young and marginalized farmers access to land at an affordable price is one way to ensure that these farmers are not forced out by major startup costs. Farms are not the only part of the food system in need though. Ensuring that regional and local suppliers, distributors, and processors are also thriving would help farmers keep their costs under control and keep the food system more diversified and resilient.

It is also critical to ensure that workers throughout the farm system have a decent livelihood. A food system that does not provide a living wage to farmers and farmworkers is not a sustainable one. A new federal farm program to guarantee farmers a fair price for their goods based on their costs of production, as well as

incentivize conservation practices, is necessary to ensure the sustainability of our farmers and our food system. For farmworkers and workers elsewhere in the food system, more competition, stronger workplace safety protections, and a higher minimum wage are key steps to ensuring a living wage.

Finally, the U.S. Department of Agriculture and Environmental Protection Agency must establish and enforce protections for farmers, workers, and the environment. These agencies have fallen prey to pressure from major agribusinesses (in the name of protecting farmers) for far too long. These agencies should be proactively protecting farmers, farm workers and rural communities rather following the dictates of agribusiness. Issuing new, stronger GIPSA rules, modeled on USDA's original 2010 draft rule, would be a good place to start.

Acting on Climate Change

Agriculture policy must address the climate crisis, both to support farmers who need to adapt and to address the huge number of emissions that the U.S. food system contributes to the problem. Livestock is a significant source of emissions from U.S. agriculture, especially concentrated animal feeding Operations (CAFOs). CAFOs are a major source of greenhouse gases and are largely unregulated from an environmental perspective. That must end. First, the emissions from CAFOs must be counted properly and regulated. Ultimately, they should be phased out altogether, as farmers begin practicing a more integrated farming system in which livestock returns to farms in a more ecologically balanced way.

Additionally, as major international forums are convened in the coming years to discuss climate change and agriculture, the US could make a major contribution to the process by getting out of the way. At forums such as the United Nations Framework Convention on Climate Change and the Committee on World Food Security, the US has relentlessly promoted its corporate-dominated, industrialized system of agriculture and undermined important work on scaling up agroecology. Continuing to export the broken U.S. farm system would be a disaster for the planet and rural communities globally. While it would be helpful if the U.S. government would take seriously the human rights obligations discussed in some of these forums, simply ending its usual blocking mechanisms would be a major step forward.

A decentralized food system and relocalized economies may sound radical, but it was not long ago that the concept of food produced by huge corporations rather than by local farms and processors was itself the radical idea. Going forward, it's essential to root climate policies and programs in human rights, especially the human right to food, to democratize the food and agriculture system and rebalance power in the economy. Farmers should be able to earn a living wage. Agriculture needs to be practiced in a way that is seeking to work with ecosystems and pursues climate resilient practices. Rural communities need more small businesses and investments to thrive in this new era. And fundamentally, the food system must fulfill people's right to food. This is only possible by breaking up the corporate consolidation that has locked U.S. agriculture into an unjust and unsustainable model.

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