

Factory Farms versus Family Farms; Breaking the Grip of Corporate Agriculture¹

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Public trust in farming and farmers has been seriously eroded by variety of controversies associated with the industrialization of American agriculture. Industrial animal agricultural operations are commonly called “factory farms” or concentrated animal feeding operations (CAFOs). In an attempt to stem the tide of growing public concern, advocates of industrial agriculture have mounted an ongoing multimillion-dollar propaganda campaign designed to – in their words – “increase confidence and trust in today’s agriculture.”¹ *Food Dialogues* is one initiative of the broader campaign that is sponsored by the U.S. Farmers and Ranchers Alliance. The organization’s board members include the American Farm Bureau Federation, John Deere, and major agricultural commodity organizations. Board members Monsanto and DuPont each initially pledged \$500,000 per year to the campaign. A recent study by Friends of the Earth documents a dozen “front groups” as spending more than \$25 million per year to defend industrial agriculture.² The campaigns have hired some of the nation’s top public relations firms to try to polish the tarnished public image of industrial agriculture.

The campaign features the “faces of farming and ranching”—articulate, attractive young farmers, obviously chosen to put the best possible face on the increasingly ugly business of industrial agriculture. The corporate propaganda is carefully crafted to convince the public that “today’s” farmers have the same core values as traditional family farmers. They are trying to cover up the fact that in virtually every important respect, industrial farming operations are very different from traditional family farms. Industrial farms are managed for profitability, regardless of the ecological and social consequences. The individuals and families who manage these farm businesses may be good people and may care about their land, their animals, and their neighbors. However, they are caught up in a system that gives production and profits priority over all other considerations. Factory farms are managed as corporate, bottom-line businesses – period.

People need to understand that American agriculture today is largely controlled by agribusiness corporations that are very different from the family farms that factory farms have displaced. The US government has allowed corporations to gain what is essentially monopoly power over agricultural markets, including markets for beef, pork, dairy products, and poultry. The initial rationalization for abandoning enforcement of antitrust laws was to reduce the cost of food production by allowing food corporations to grow larger to gain “economies of scale.” The successful corporations either bought out their competitors or forced them out of business. Rather than reduce food costs, however, corporations used their power to manipulate markets to increase corporate profits at the expense of both consumers and agricultural producers. With market power, came economic and political power. With political power, the ability to continue expanding and to operate with little if any government oversight or restraint.

The large agribusiness corporations formed political alliances with the American Farm Bureau Federation and agricultural commodity groups—including the National Cattleman’s Beef

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Association, National Pork Producers Council, National Milk Producers Federation, and National Chicken Council. These organizations share a common interest in ensuring that large volumes of agricultural products continue to move through agricultural markets, with little regard to whether either consumers or farmers benefit from the process. The American Farm Bureau Federation is heavily invested in agribusiness and is philosophically committed to industrial agriculture. Funding for the commodity organizations is determined by volume of animals or animal products marketed. The agribusiness corporations expect to make a profit on every market transaction. More production means more opportunities for profit, regardless of the ecological or social consequences.

Through intensive lobbying and financial support of like-minded legislators, the “agricultural lobby” virtually dictates government farm policies at federal and state levels. They pay travel costs for farmers and their family members to visit legislators in Washington DC and state capitals—to provide “window dressing” for their political campaigns. These organizations actually consider family farming to be hopelessly out of date—farms of the past, not the future. However, they have no reluctance to use the positive public image of family farming to hide their political and economic agenda. Their legislative agenda is to support the continued industrialization of American agriculture, regardless of the consequences for real family farms.

As a result, industrial agriculture is exempt from federal regulation under the Clean Air Act and is covered by only token regulations under the Clean Water Act. Factory farms are still regulated as if they were traditional family farms and traditionally, family farms were largely self-regulated by their family and community values. Regardless, defenders of factory farms understand that industrial agriculture eventually will be confronted with increasing demands for government regulations—like other resource extracting and environmental polluting industries. In response, the agricultural establishment has adopted a nation-wide legislative strategy to build a legal “firewall” to protect corporate agriculture from future government regulation. Strategically designed and orchestrated legislative initiatives have promoted stronger “right to farm” laws in agricultural states all across the country. By one means or another, these laws give “corporate, industrial farms” the same legal rights as “traditional, family farms.” They officially sanction the continuing use of industrial farming practices by allowing the industrial agricultural establishment to define “accepted modern farming practices.”

An agricultural operation can still be sued by its neighbors if it creates a “legal nuisance.” Under some of the new laws, however, if neighbors win their law suit, the economic damages awarded by the court cannot exceed the depreciation in market values of property and medical expenses that can be linked to the agricultural operation. Punitive damages are limited to a percentage of economic damages. Even more important, once the initial nuisance suit is settled, the agricultural operation is treated as a “permanent nuisance,” meaning it can continue to operate as usual and cannot be sued again. Laws in several states restricting corporate ownership of farmland also have been challenged, weakened, or overturned. This clearly is part of the national campaign to convince Americans that corporate agriculture is fundamentally the same as traditional family farming—which is simply not true.

Unlike a factory farm, a family farm is not just a means of making money or a living—it is a way of life. On a true family farm, the farm and the family are inseparable. The farmer or farm

family makes the management decisions and accepts personal responsibility for the consequences. The positive or negative impacts of these decisions on the health of their land and the quality of life in their communities are reflection of the ethical and social values of the family. True family farms are managed to provide multiple economic, social, ecological benefits for their workers, communities, consumers, and society in general, not just profits for the family. What is good for the land, good for the community, and good for society is good for the family farm. True family farms really do not require much regulation or oversight.

Farms that are legally organized as family corporations can be managed much the same as other family farms. The families can give their ethical and social values priority over the economic bottom-line—if they choose to do so. However, many of today’s farm families have chosen to relinquish their management responsibilities to publicly-traded corporations through comprehensive contractual arrangement. According to the 2012 U.S. Census of Agriculture,³ the largest 4% of producers, those with annual sales of more than one-million dollars, now account for two-thirds of the total value of U.S. agricultural production. Virtually all of these large operations produce under some form of corporate influence or control. Just under 95% of all livestock and poultry operations are managed under some form of corporate contractual arrangement.⁴ On most factory farms, the contract producers don’t even own the animals; they are owned by the corporate contractor.

These large, publicly-traded corporations that increasingly control agriculture are not real people; they are purely economic organizations that have no capacity for social or ethical values. While individual shareholders obviously have personal values, the only value corporate shareholders have in common is their desire to increase economic return on their investments. Corporations are legally responsible to serve the “common interests” of investors. Most individual investments today made through pension funds and mutual funds, which means most investors don’t even know which stocks they own on any given day. Electronic trading, where stocks are more likely to be owned for seconds rather than years, essentially eliminates any ability for individual investors to influence corporate management. Maximizing economic returns is the logical default management strategy for corporate managers.

Corporations dictate the terms of contract production for factory farms and thus have the economic power to force their contract producers to serve the common interest of corporate investors by focusing on the economic bottom-line. Even if such operations are owned and operated by families, the contractual arrangement prevent them from reflecting the social and ethical values of the families.

The negative consequences of farming for the economic bottom-line is not a matter of idle speculation or misinformed public opinion. The scientific facts are becoming increasingly clear. For example, an extensive 2½-year study of “industrial farm animal production” was commissioned by a highly-reputable, non-partisan organization, the Pew Charitable Trust. Their 2008 report concluded: “*The current industrial farm animal production (IFAP) system often poses unacceptable risks to public health, the environment and the welfare of the animals themselves.*”⁵ This prestigious commission included a former governor and U.S. Secretary of Agriculture, along with academic, farming, and industry representatives. It concluded: “*the negative effects of the IFAP system are too great and the scientific evidence is too strong to*

ignore. Significant changes must be implemented and must start now.” Five years later, an assessment of the industry’s response to the Pew Report by the Johns Hopkins Bloomberg School of Public Health indicated that few if any positive changes had been made. Meanwhile the scientific evidence supporting the initial indictment of IFAPs has continued to grow.⁶

With respect to water pollution, the PR campaign claims that farmers are responsible stewards of the environment. In fact, industrial agriculture has long been known to be the major cause of huge “dead zones” in the Gulf of Mexico, Chesapeake Bay, and elsewhere. While mismanagement of synthetic fertilizers is a major contributor, CAFOs also are documented polluters of streams and groundwater. A 1998 EPA study found 35,000 miles of streams in 22 states and ground water in 17 states that had been polluted by industrial livestock operations.⁷ As a last defense, CAFO operators claim they are doing a better job of manure management than the traditional independent farmers they displaced. However, the Iowa Department of Natural Resources documented more than 800 “impairments” of water bodies in the state of Iowa in 2016. This is more than a five-fold increase between 1998 and 2016, years during which CAFOs have largely replaced independent family hog farms in Iowa.⁸

Research also verifies that the public health risks of CAFOs posed by water polluted by livestock manure are similar to those posed by untreated human sewage. A “medium” size CAFO, meaning up 2,499 head of hogs, which in virtually unregulated, can generate the biological waste equivalent to the human waste from a municipality of 7,500 to 10,000 people.⁹ There are logical reasons for requiring sophisticated, multi-stage waste treatment systems for municipalities of 7,500 to 10,000 people. It would be unthinkable that the people in a municipality of 10,000 people would be allowed to spread their untreated raw sewage on city lawns and backyards to be flushed away with the storm water. Yet it is legal to spread even far larger amounts of raw, untreated sewage from CAFOs near people’s homes. “Knifing in” manure does little more than speed contamination of groundwater relative to surface water.

With respect to the inhumane treatment of farm animals, the public relations campaign claims that CAFO operators have an economic incentive to treat their animals well in order to keep them healthy and productive. In fact, most farm animals are sent to slaughter at young ages, before most injuries or chronic illnesses can cause significant weight loss or death. Farm animals are social animals and evolved to flourish outdoors with room to socialize and express normal behaviors for their species. Animals in areas outside of their climatic range may need shelter from adverse weather, but no animal is comfortable when it is confined in crates, cages, or other spaces too small to allow normal behavior. It is never humane to force an animal to live in or inches above its own putrefying wastes. Decades of research has verified that the physical and mental suffering of animals is given no consideration other than the impact on the economic bottom line.¹⁰

With respect to food safety, the corporately-funded PR campaign proclaims that Americans have the safest, most healthful food system in the world. While this may have been true in the past, there is growing scientific evidence that food safety has diminished with industrialization of the American food system – including industrial agriculture. Recalls of food products of animal origin contaminated with salmonella, listeria, Campylobacter, and E-Coli, even if not yet routine, have become far from uncommon.¹¹ Studies consistently have shown that significant percentages

of livestock and poultry products in retail food markets are contaminated with a variety of infectious bacteria.¹² A large percentage of bacteria found in contaminated animal food products, including the deadly MRSA, have been resistant to multiple antibiotics.¹³

The Food and Drug Administration has known since at least the 1970s that routine feeding of antibiotics to livestock and poultry in CAFOs is a common source of antibiotic resistant bacteria, such as MRSA. An estimated 80% of all antibiotics in the U.S. are used for livestock and poultry and 70% is routinely fed at sub-therapeutic levels. A 2013 U.S. Center for Disease Control and Prevention report resolved any doubt about the possible transference of antibiotic resistant bacteria from animals to humans: “Scientists around the world have provided strong evidence that antibiotic use in food-producing animals can harm public health... Use of antibiotics in food-producing animals allows antibiotic-resistant bacteria to thrive while susceptible bacteria are suppressed or die. Resistant bacteria can be transmitted from food-producing animals to humans through the food supply.”¹⁴

A recent global summit of Heads of State at the United Nations General Assembly, only the fourth related to human health crises, concluded: “The high levels of AMR [antimicrobial resistance] already seen in the world today are the result of overuse and misuse of antibiotics and other antimicrobials in humans, animals, and crops, as well as the spread of residues of these medicines in soil, crops and water.”¹⁵ The Director-General of the UN Food and Agricultural Organization stated: “Antimicrobial resistance is a problem not just in our hospitals, but on our farms and in our food, too. Agriculture must shoulder its share of responsibility, both by using antimicrobials more responsibly and by cutting down on the need to use them.” Antibiotic resistant bacteria has become a major public health risk and is clearly linked to CAFOs.

Noxious odors usually are the first and probably most frequent concern of neighbors of CAFOs. Proponents claim that while odors from CAFOs may be an occasional nuisance, they are no different from other agricultural operations which, by their nature, emit dust particles and odors into the air. In fact, the anaerobic process by which animal manure decomposes in the large manure pits and cesspools associated with CAFOs are quite different from aerobic decomposition of manure in open fields. Chemical compounds associated with noxious odors from CAFOs include potentially toxic ammonia, hydrogen sulfide, and methane. Dust particulates from CAFOs can carry antibiotic resistant bacteria, viruses, E. coli, Salmonella, parasites, antibiotics, hormones, and numerous other contaminants.¹⁶ Numerous scientific studies by reputable health institutions have linked air pollution from CAFOs to a variety of respiratory ailments not only of people working in CAFOs but also of people living near CAFOs, particularly children in nearby schools.¹⁷

The corporate propaganda campaign claims that industrial agriculture is necessary to ensure the economic future of rural communities. Contrary to such claims, the industrialization of agriculture has had a devastating effect on rural economies. The economic benefits of industrialization come from reducing costs of labor and management by reducing the number of workers and the skill-level of workers – both in manufacturing and in agriculture. As a result, independent family farmers have been replaced with a far smaller number of farm workers, most of whom are paid poorly. In 1960, farmers were still more than *eight percent* of the U.S. workforce. Today, they are less than *one percent*. Between 1980 and 2008, as CAFOs replaced

independent livestock farmers, the number of beef cattle operations fell by 41%, hog farms declined by 90%, and dairy farms fell by 80%.¹⁸ Numbers of livestock farmers continue to decline as the size of factory farms continue to grow. Rural communities have suffered and are still suffering both economically and socially from this loss of traditional farm families.

A special socioeconomic report released in conjunction with the 2008 Pew Commission reported concluded: “Economically speaking, studies over the past 50 years demonstrate that the encroachment of industrialized agriculture operations upon rural communities results in lower relative incomes for certain segments of the community and greater income inequality and poverty, a less active “Main Street,” decreased retail trade, and fewer stores in the community.”¹⁹ A 2006 study commissioned by the State of North Dakota Attorney General’s Office reviewed 56 socioeconomic studies that consistently “found detrimental effects of industrialized farming on many indicators of community quality of life, particularly those involving the social fabric of communities.”²⁰ The only kinds of economic development attracted to “industrial agricultural communities” are other environmentally polluting and socially degrading industries.

American consumers are told they must be willing to accept any environmental, public health, and food safety risks of industrial agriculture to avoid unaffordable food prices and massive global starvation. In fact, there is nothing to indicate that industrial agriculture has produced more food than could have been produced by traditional family farmers, only that it has employed far fewer farmers and supported far fewer farm families. For example, the number of hog farms in the U.S. fell by more than 70 percent in the between 1992 and 2004, whereas total hog numbers remained stable.²¹ Any production costs advantages for CAFOs have been more than offset by higher marketing margins and profits elsewhere within the corporate food supply chain within which industrial agriculture is a crucial link.²² During the 20 years between 1992 and 2012, an era of intensive agricultural industrialization, U.S. retail food prices rose faster than overall consumer price inflation rates.²³

The national experiment in industrial agriculture was well-intended. The intention was to make agriculture more economically efficient in order to make enough safe, nutritious food accessible to everyone. Contrary to intentions and early expectations, industrial agriculture failed in this most fundamental purpose. The percentage of “food insecure” people at risk of hunger in the United States is far greater today than during the 1960s, with more than one-in-six children living in food insecure homes.^{24, 25} Furthermore, the industrial food system is linked to a new kind of food insecurity: unhealthy foods that lack essential nutrition. A recent global report by 500 scientists from 50 countries suggested that “obesity is [now] a bigger health crisis than hunger.”²⁶ There is growing evidence that America’s diet-related health problems are not limited to poor consumer food choices or processed “junk foods.” Malnutrition begin with a lack of nutrient density in crops produced by industrial agriculture and fed to animals in factory farms.²⁷ Wherever industrial agriculture has been spread around the world, similar diet-related health problems have followed.

A 2016 UN study by an International Panel of Experts in Sustainability (IPES) described the evidence condemning industrial agriculture as “overwhelming.”²⁸ They cited more than 350 studies in documenting the failures of industrial agriculture and calling for fundamental change. The study concluded: “Today’s food and farming systems have succeeded in supplying large

volumes of foods to global markets, but are generating negative outcomes on multiple fronts: widespread degradation of land, water and ecosystems; high GHG emissions; biodiversity losses; persistent hunger and micro-nutrient deficiencies alongside the rapid rise of obesity and diet-related diseases; and livelihood stresses for farmers around the world.”

The study also provides extensive evidence that an alternative non-industrial approach to farming and food production holds the greatest promise of future global food security. They state: “What is required is a fundamentally different model of agriculture based on diversifying farms and farming landscapes, replacing chemical inputs, optimizing biodiversity and stimulating interactions between different species, as part of holistic strategies to build long-term fertility, healthy agro-ecosystems and secure livelihoods. Data shows that these systems can compete with industrial agriculture in terms of total outputs, performing particularly strongly under environmental stress, and delivering production increases in the places where additional food is desperately needed. Diversified agroecological systems can also pave the way for diverse diets and improved health.”

The rest of the world doesn’t need or want factory farms. Contrary to popular belief, more than 70% of the people in the world get their food from small, largely subsistence family farms.²⁹ International studies show that Agroecology and other non-industrial approaches to farming could double or triple the yields, allowing the rest of the world to feed itself.³⁰ The so-called developing countries don’t want or need factory farms to displace their small family farms only to produce commodities for exports for more profitable markets elsewhere, leaving their people still poor and hungry. In fact, a variety of sustainable alternatives are quite capable of completely replacing industrial agriculture. In the U.S., these alternatives are called organic, ecological, biodynamic, holistic, low-input, or just plain family farming. These are fastest growing types of farms in the U.S. and only farms with a future.

The corporate propaganda campaign claims it is meant to support all types of agriculture, including organic farming. However, it marginalizes all alternatives to industrial farmers by treating them as niche producers, hobby farmers, or back-to-the-landers. The corporate propaganda claims *commercial* livestock producers have no “economically viable” alternatives to CAFOs. However, extensive research has confirmed that producing hogs in deeply bedded hoop houses can be economically competitive with CAFOs.³¹ If estimated production costs advantages for CAFOs were reflected at retail levels, the cost of a pound would be no more than 2 to 4 cents per pound or about 1% higher. Studies at various universities have shown grass-based dairy farms to actually be more profitable than confinement dairy operations.³² It just takes more dairy farmers to produce the same amount of milk. Among the most profitable of sustainable agriculture enterprises are grass-based, free-range, humanely-raised, and pastured beef, dairy, pork, and poultry operations.

The health benefits of eating beef and dairy products from animals raised on grass, rather than in CAFOs, and been widely documented in various scientific reports.³³ Omega-3 and Omega-6 fatty acids are important nutrients obtained from animal products that are necessary for the body to grow and repair itself. But these essential fats must be consumed in the proper levels to provide good health. Omega-3 fatty acids play an important role in protecting heart health, preventing stroke, reducing inflammation, and lowering blood pressure.³⁴ While Omega-6 fatty

acids are also necessary, studies show that consuming too much Omega-6s increases the risk of diabetes, inflammatory diseases, cancer, and contributes to the obesity epidemic.^{35, 36} Therefore, it's important to consume a higher ratio of Omega -3 than Omega-6s to maintain one's health.

The benefits of grass-fed animal products arise primarily from higher levels of the Omega-3 fatty acids, or CLA, which have beneficial antioxidant properties. CAFO animal products contain more harmful Omega-6 due to the high-energy grain rations fed in factory farms. Benefits from pasture or free-range pork and poultry are similar, but not as easily documented because grass typically doesn't make up a large part of their diets. That being said, the greater the diversity of animal diets, the greater the Omega-3 advantage over animals fed high-energy corn-soy feeds in CAFOs.³⁷

There is simply no logical defense of today's corporately dominated industrial agri-food system. Sound science and common sense both support growing public concerns and demands for fundamental change. However, the corporate defenders of the status quo have far more economic and political power than the advocates of change. In fact, the only power greater than the corporate power that supports factory farms and dominates the food system is the collective "power of people." Ultimately, the power of the people must be organized and actualized to wrest political and economic power from the agri-food corporations. The greatest challenge, the willingness to organize and ability to bring about fundamental change must come from within—from the hearts and souls of the people.

We must come to a common understanding that the transition from family farms to factory farms is a symptom of a deeper change from within American culture. The rise of corporate domination of American agriculture is a symptom of this same deep change in American values. Historically, large publicly traded corporation were recognized as a threat to society and were granted charters by society and allowed to exist only in special situations where they were deemed necessary to serve some larger societal purpose. Over time, however, Americans lost sight of the societal promises made by corporate organizations and have come to embrace them as purely economic entities. In the case of American agriculture, corporate consolidation was deemed necessary for industrialization, which was justified as a means of making safe, nutritious food affordable and accessible to everyone. Industrial agriculture has been an abysmal failure in fulfilling its societal purpose, still Americans continue to embrace corporate agriculture, apparently for purely economic reasons.

Over time, America has evolved into a culture preoccupied by the pursuit of individual wealth and national economic growth. Corporate domination of government as well as control of our economy are natural consequences of this preoccupation. As with the failure of corporate agriculture to provide food security, the American corporate economy has failed to provide quality employment opportunities, job security or reliable fringe benefits, affordable housing, physical or mental health, public safety, homeland security, or any of the other promised benefits of economic growth. The United States is not alone in this economic dilemma. A British Cabinet study indicates there has been no overall improvement in well-being, happiness, or overall quality of life in the U.S. or any of the so-called developed nations since the 1950s³⁸ – in spite of continued growth in incomes and wealth. The corporatization of American culture, including the

corporatization of American agriculture, was a well-intended experiment that simply didn't work. It's time to admit the mistake and start over.

Just as the transition from family farms to factory farms provides a metaphor for the failure of corporate economic development, the historic ideal of family farming provides a useful metaphor for where and how Americans need to start over. Economic well-being is an important aspect of a desirable way of life. We are material beings in that we need things such as food, clothing, shelter, health care—things money can buy. However, money is simply a claim to something else—of no value in itself. Money is a means of acquiring some things we need for a desirable quality of life, but some of the most important things in life have no economic value.

As with family farming, our occupations or life's work must provide us with opportunities to create and sustain personal relationships—within families, friendships, communities—as well as a means of making a living. We are social beings. We need relationships with other people for reasons that have nothing to do with anything of economic value we may receive in return. We need to care and be cared for, to love and be loved simply because we are human. We are also moral beings. As family farmers feel an ethical commitment to leave their land as productive as it was placed in their keeping, we must recommit ourselves to caring for the earth. We need the sense of purpose and meaning that comes from doing things simply because they are the right thing to do. The rejection of industrial systems of farming and food production, and the creation of a new sustainable future of food, is not just about a better way to fuel the human body, it is about feeding the human spirit and soul.

Perhaps the metaphor of family farming is based on a myth—an ideal that never existed in reality. We know that relationships on family farms and in farming communities were not always harmonious. We know that family farmers frequently degraded the productivity of their land—perhaps out of ignorance rather than intent. However, the reality of family farming does not diminish the value of the metaphor of family farming as an ideal. The reality of our America two hundred years ago was far different from the democratic ideals in our founding documents. However, those ideals have served as a beacon to guide the nation through some difficult times. Perhaps the ideal of family farming can guide to a sustainable system of farming and food production for the future.

Whenever Americans are confronted with a dilemma such as we face today, there is a tendency to want to do something “practical”—something tangible they can do today that will make a big difference. However, today's challenges require acts of faith. We must act with confidence that if we do the right things for the right reasons, meaning because they are the right things to do, ultimately the right things will happen. There are many right things we can do, such as buy as much of our food as we can from local farmers who are going the right things for the right reasons. We can also do whatever we are capable of doing within our communities to support people who will do the right things for the right reasons whether in public or private positions of leadership—including opposing factory farms and supporting the ideal of family farms.

We can join and support advocacy organizations that are committed to doing the right things for the right reasons. We can spend our time and energy on battles we know we will lose and will make little tangible difference if we win—simply because they are the right battles to fight. We can

support collations with like-minded organization so all of these small battles become part of a larger, unified initiative that ultimately will wrest political and economic power from the corporations and restore the ideal of family farming. Together, we the people have the power to reclaim our collective power to govern—and reclaim the ideal of our American democracy. Regardless of what strategies we might choose, it is simply not very intelligent to continue accepting the corporate fallacies of industrial agriculture, including the fallacy that factory farms are no different from family farms. To break the grip of corporate agriculture, we must start doing the right things for the right reasons.

End Notes

¹ Food Dialogues, “About USFRA,” <http://www.fooddialogues.com> .

² Kari Hamerschlag and Anna Lappé, “Spinning Food,” Friends of the Earth, <http://www.foe.org/projects/food-and-technology/good-food-healthy-planet/spinning-food#sthash.8Xhj3lqt.dpuf> .

³ United States Department of Agriculture, Census of Agriculture, 2012. <http://www.agcensus.usda.gov/Publications/2012/>

⁴ James M. MacDonald, “Trends in Agricultural Contracts,” Choices, AAEA, <http://www.choicesmagazine.org/choices-magazine/theme-articles/current-issues-in-agricultural-contracts/trends-in-agricultural-contracts>

⁵ Pew Commission on Industrial Farm Animal Production: “Putting Meat on The Table: Industrial Farm Animal Production in America,” 2008, http://www.pewtrusts.org/news_room_detail.aspx?id=38438 , full report, <https://www.ncifap.org/reports/> .

⁶ Johns Hopkins Center for a Livable Future, “Industrial Food Production in America; Examining the impacts of the Pew Commissions primary recommendations.” http://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-a-livable-future/pdf/research/clf_reports/CLF-PEW-for%20Web.pdf.

⁷ U.S. Department of Agriculture Natural Resources Conservation Service and U.S. Environmental Protection Agency, “Unified National Strategy for Animal Feeding Operations,” draft, September 11, 1998, as quoted in *CAFO: The Tragedy of Industrial Animal Factories*, Myths, Dan Imhoff, editor, http://www.cafothebook.org/thebook_myths_6.htm .

⁸ Iowa Department of Natural Resources, Iowa’s Section 303(d) Impaired Water Listings, <http://www.iowadnr.gov/Environmental-Protection/Water-Quality/Water-Monitoring/Impaired-Waters> .

⁹ Ron Fleming and Marcy Ford Human versus Animals - Comparison of Waste Properties, Ridgetown College - University of Guelph, July 4, 2001, http://www.ridgetownc.uoguelph.ca/research/documents/fleming_huvsanim0107.pdf

¹⁰ World Society for Protection of Animals, “What’s on Your Plate? The Hidden Costs of Industrial Animal Agriculture in Canada, 2012, http://richarddagan.com/cafo-ilo/WSPA_WhatsonYourPlate_FullReport.pdf .

¹¹ U.S. Food and Drug Administration, Recalls, Market Withdrawals, and Safety Alerts, <http://www.fda.gov/Safety/Recalls/> .

¹² Cuiwei Zhao, and others, Prevalence of *Campylobacter* spp., *Escherichia coli*, and *Salmonella* Serovars in Retail Chicken, Turkey, Pork, and Beef from the Greater Washington, D.C., Area, *Applied Environmental Microbiology*, December 2001 vol. 67 no. 12. <http://aem.asm.org/content/67/12/5431.short> .

¹³ Andrew E. Waters and others, Multidrug-Resistant *Staphylococcus aureus* in US Meat and Poultry, *Clinical Infectious Diseases*, (2011) 52 (10):1227-1230, published online: April 15, 2011, <http://cid.oxfordjournals.org/content/52/10/1227.full> .

¹⁴ US Center for Disease Control and Prevention, Antibiotic Resistance Threats in the United States, 2013 Executive Summary, <http://www.cdc.gov/drugresistance/threat-report-2013/pdf/ar-threats-2013-508.pdf#page=6> .

¹⁵ General Assembly of the United Nations, “At UN Global Leaders Commit to Act on Antimicrobial Resistance,” <http://www.un.org/pga/71/2016/09/21/press-release-hl-meeting-on-antimicrobial-resistance/> .

¹⁶ United States EPA, *Literature Review of Contaminants in Livestock and Poultry Manure and Implications for Water Quality*. July 2013. <http://water.epa.gov/scitech/cec/upload/Literature-Review-of-Contaminants-in-Livestock-and-Poultry-Manure-and-Implications-for-Water-Quality.pdf> .

¹⁷ Pew Commission Report on Industrial Animal Agriculture, “Impact of Industrial Farm Animal Production on Rural Communities,” 2008, <https://www.ncifap.org/reports/> .

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- ¹⁸ R-CALF USA. “Comments on Agriculture and Antitrust Enforcement Issues in Our 21st Century Economy.” Comment to U.S. Department of Justice. December 31, 2009. <https://www.yumpu.com/en/document/view/30593081/r-calf-usas-comments-to-the-department-of-justice-regarding-> .
- ¹⁹ Pew Commission Report on Industrial Animal Agriculture, “Impact of Industrial Farm Animal Production on Rural Communities,” 2008. <https://www.ncifap.org/reports/> .
- ²⁰ Curtis Stofferahn, “Industrialized Farming and Its Relationship to Community Well-Being: an Update of the 2000 Report by Linda Labao,” special report prepared for the North Dakota, Office of Attorney General, <http://www.und.edu/org/ndrural/Lobao%20&%20Stofferahn.pdf> .
- ²¹ Nigel Key and William McBride, Changing Economics of U.S. Hog Production, ERS, USDA, Economic Research Report Number 52 December 2007, <http://www.motherjones.com/files/err52.pdf> , p iii.
- ²² Economic Research Service, United States Department of Agriculture, “Price Spreads from Farm to Consumer,” <http://www.ers.usda.gov/data-products/price-spreads-from-farm-to-consumer.aspx> .
- ²³ Richard Volpe, “Price inflation for food outpacing many other spending categories,” Economic Research Service, USDA. <http://www.ers.usda.gov/amber-waves/2013-august/price-inflation-for-food-outpacing-many-other-spending-categories.aspx#.VMQJKf7F98F> .
- ²⁴ CBS documentary, “Hunger in America,” 1968, <https://www.youtube.com/watch?v=h94bq4JfMAA> .
- ²⁵ Alisha Coleman-Jensen, Christian Gregory, and Anita Singh, “Household Food Security in the United States in 2013,” Economic Research Report No. (ERR-173) p 41. <http://www.ers.usda.gov/media/1565415/err173.pdf> .
- ²⁶ Danielle Dellorto, “Global report: Obesity bigger health crisis than hunger.” CNN News, December 14, 2012 <http://www.cnn.com/2012/12/13/health/global-burden-report/> .
- ²⁷ John Ikerd, in *Soil Fertility & Human and Animal Health*, by William A. Albrecht, (Austin, TX: Acres U.S.A., 2013), Foreword, pp xv-xxvi. Also available at <https://sites.google.com/site/albrechtlecture/home/text-of-2011-albrecht-lecture> .
- ²⁸ Andrea Germanos, “‘Overwhelming’ Evidence Shows Path is Clear: It's Time to Ditch Industrial Agriculture for Good” *Common Dreams*, Thursday, June 02, 2016, http://www.commondreams.org/news/2016/06/02/overwhelming-evidence-shows-path-clear-its-time-ditch-industrial-agriculture-good?utm_campaign=shareaholic&utm_medium=facebook&utm_source=socialnetwork
- ²⁹ Food and Agricultural Organization of the United Nations, *State of Food and Agriculture, 2014*, <http://www.fao.org/3/a-i4036e.pdf> .
- ³⁰ Fred Kirschenmann, The challenge of ending hunger, Leopold Center for Sustainable Agriculture, Leopold letter, winter 2012, http://lib.dr.iastate.edu/leopold_letter/59/ .
- ³¹ USDA Sustainable Agriculture Research and Education Program, “Hog Production Systems,” <http://www.sare.org/Learning-Center/Bulletins/Profitable-Pork/Text-Version/Hog-Production-Systems> .
- ³² Thomas S. Kriegl, University of Wisconsin Center for Dairy Profitability, University of Wisconsin-Extension Madison, WI. See <http://cdp.wisc.edu> for more information.
- ³³ Cynthia A Daley, Amber Abbott, Patrick S Doyle, Glenn A Nader and Stephanie Larson, “A review of fatty acid profiles and antioxidant content in grass-fed and grain-fed beef” *Nutrition Journal* 2010;10, <https://nutritionj.biomedcentral.com/articles/10.1186/1475-2891-9-10> .
- ³⁴ “17 Science-Based Benefits of Omega-3 Fatty Acids.” Authority Nutrition. <http://www.healthline.com/nutrition/17-health-benefits-of-omega-3> .
- ³⁵ “Nutrients. March 2016 An Increase in the Omega-6/Omega-03 Fatty Acid Ratio Increases the Risk for Obesity.” <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4808858/>
- ³⁶ “A Western-like Fat Diet Is Sufficient to Induce a Gradual Enhancement in Fat Mass Over Generations.” *Journal of Lipid Research*. August 2010. Volume 51, pages 2352-2361. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2903802/>
- ³⁷ PaleoLeap, “Not Just Cows: Pastured Pork and Poultry,” <https://paleoleap.com/just-cows-pastured-pork-poultry/>
- ³⁸ James Oliver, “Children before cash; better childcare will do more for our wellbeing than greater affluence,” *The Guardian*, May 17, 2003. <http://www.guardian.co.uk/society/2003/may/17/children.healthandwellbeing> .