

Factory Farms: The “Wicked Problem” Destroying Rural Economies and Communities”ⁱ

John Ikerdⁱⁱ

I first became involved with the controversies surrounding factory farms or concentrated animal feeding operations (CAFOs) in the mid ‘90s. Someone at University of Missouri had developed a white paper touting CAFOs as a rural economic development strategy for northwest Missouri. I was coordinating sustainable agriculture programs for MU at the time. One of the farmers I had been working with in the area asked me to take a look at the paper and let him know what I thought about it. He obviously was upset that the University was promoting CAFOs for his area. I was aware that the growth in hog numbers in North Carolina, due to the proliferation of CAFOs, was challenging the leadership of the Midwest in hog production. However, I had been preoccupied with developing a program in sustainable agriculture.

I asked the farmer to send me a copy of the report to make sure I read the right paper. It was essentially an economic feasibility study for producing hogs in CAFOs that focused on the potential number of jobs created and income from employment in CAFOs. My immediate question was how the numbers shown in the study compared with actual number of people employed and the incomes of current Missouri hog farmers. Fortunately, the University had a mail-in records program at the time. A significant number of Missouri hog farmers, meaning more than 90% of farm income from hogs, had been enrolled in the program over the past several years. The Dept. of Agricultural Economics had published a summary of the records to allow individual farmers to compare their economic performance to the others.

I was able to compare the employment and income figures in the CAFOs feasible study with actual incomes and numbers of independent Missouri hog farmers currently employed in producing “the same number of hogs.” My analysis showed that producing the same number of hogs would employ only about one-third as many workers in CAFOs as were currently employed on Missouri hog farms. I concluded that bringing CAFOs to Northwest Missouri would displace approximately three Missouri hog farmers for every worker employed in a CAFO. The comparison also indicated that income per CAFO worker, including professionals, would be comparable to average incomes of hog farmers and workers on independent hog farms. Reducing employment in agriculture hardly seemed like a logical rural economic development strategy. I wrote what amounted to be a rebuttal to the CAFO promotion paper, for which I was roundly criticized by my colleagues and university administrators for a lack of loyalty to the University.

I proclaimed that my first loyalty and responsibility was to the people of Missouri and only to the University when it is loyal to the people. I have been embroiled in the CAFO controversy ever since. CAFOs came to Northwest Missouri, in spite of the opposition of many loyal

ⁱ Prepared for presentation at a public community meeting in Canton, MO, February 25, 2017.

ⁱⁱ John Ikerd is Professor Emeritus, University of Missouri, Columbia, MO – USA; Author of, *Sustainable Capitalism-a Matter of Common Sense*, *Essentials of Economic Sustainability*, *A Return to Common Sense*, *Small Farms are Real Farms*, *Crisis and Opportunity-Sustainability in American Agriculture*, and *A Revolution of the Middle-the Pursuit of Happiness*, all books available on [Amazon.com](http://www.amazon.com): [Books](#) and [Kindle E-books](#).
Email: JEIkerd@gmail.com; Website: <http://faculty.missouri.edu/ikerdj/> or <http://www.johnikerd.com> .

Missourian. As a consequence, Missouri lost more than 90% of its independent hog farmers and local economies and communities of rural Missouri lost the employment and incomes of farm families who had depended on hogs to make their farms economically viable. Employment in CAFOs probably offset maybe one-third of the lost income and employment on family farms. The employment in CAFOs came at high environmental and social cost to the communities where they located. The losses in employment and incomes were suffered elsewhere.

In the early days of CAFOs, the few professionals who opposed them were accused of being biased, nonobjective, and unprofessional, as well as disloyal. We were relying on raw data, such as farm records, and the personal testimony of people who lived near CAFOs rather than sophisticated economic impact assessment models. Those who lived near CAFOs were accused of being emotional and irrational – imaging they smelled noxious odors and reporting physical symptoms and illnesses that did not exist. Those opposing CAFOs anywhere in their communities were accused of being uninformed, economically illiterate, or under the influence of environmental radicals such as the Sierra Club and Humane Society. Proponents of CAFOs called for decisions based on “sound science,” which meant relying on reports developed by scientists at the agricultural colleges, such as my colleagues at the University of Missouri.

In the early days of CAFOs, there was some logical basis for labeling opposition to CAFOs as being “unscientific” as we weren’t using accepted scientific methods. The conclusions of my analysis had no statistical validity, although they made common sense and had proven to be a fairly accurate in prediction of eventually reality. The physical maladies of neighbors of CAFOs were “self-reported,” which meant relying on the integrity of real people rather than scientific instruments. The “scientific” information available to people in rural communities at the time was largely about industrial agriculture in general. We had a significant body of scientific evidence related to confinement chicken CAFOs, and large cattle feed lots, but there was little scientific information that related specifically to hog CAFOs.

The situation today is very different. We now have 50+ years of research and real world experience to verify persistent claims of the negative environmental, social, and economic impacts of industrial agriculture on rural communities. CAFOs are the epitome of industrial agriculture; that’s why people call them “factory farms.” We now know that the negative environmental, social, and economic impacts are very similar for poultry, beef, pork, and dairy CAFOs. In fact, I think it can be misleading to site a few specific studies now that so much scientific documentation of the negative environmental, social, economic, and public health impacts of factory farms is available. I have started relying instead on “meta-studies” which rely on the results of dozens or hundreds of individual studies to draw generalizable conclusions.

For example, in 2008 an extensive 2½-year study of “industrial farm animal production” was commissioned by a highly-reputable, non-partisan organization, the Pew Charitable Trust. Their 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.*”ⁱ This prestigious commission included a former U.S. Secretary of Agriculture, along with academic, farming, and industry representatives. In addition to reviewing hundreds of documents, they took oral testimony from experts in various regions of the country. They 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, in 2013, an assessment of the industry’s response to the Pew Report by the Johns Hopkins Bloomberg School of Public Health concluded that few if any positive changes had been made.ⁱⁱ Meanwhile the scientific evidence supporting the initial indictment continues to grow.

For example, the spread of antibiotic resistant bacteria, such as the deadly MRSA may be the Achilles Heel of factory farms. A 2013 U.S. Center for Disease Control and Prevention report stated: “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.”ⁱⁱⁱ

A 2016 global summit of Heads of State at the United National General Assembly, only the fourth such summit related to a 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.”^{iv} 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.” CAFOs represent scientifically verified public health risks.

The negative economic and social impacts of industrial agriculture are also well documented. A 2009 Pew report 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.”^v A 2006 study commissioned by the State of North Dakota Attorney General’s Office reviewed 56 articles in peer-reviewed journals and “found detrimental effects of industrialized farming on many indicators of community quality of life, particularly those involving the social fabric of communities.”^{vi} The only kinds of economic development attracted by factory farms are other environmentally polluting and socially degrading industries.

A 2016 independent study by an International Panel of Experts in Sustainability described the evidence condemning industrial agriculture as “overwhelming.”^{vii} 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.”^{viii}

They conclude: “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 multiple ecological, social, and economic problems associated with CAFOs are what social economists call “wicked problems:” meaning, critically interconnected problems that are an inherent consequence of the industrial system of production. The industrial system is very efficient in extracting and exploiting the productive resources of nature and society, but in the process, it creates unavoidable negative environmental, social and economic consequences. The negative impact of industrial agriculture are for the same kind or nature as those of other industrial production processes – steel mills, oil refineries, power plants, and chemical factories. The only solution to the “wicked problem” of industrialization is to change the whole system.

Wicked problems, such as those associated with CAFOs, arise due to the complexity, interconnectivity, and dynamic nature of the systems within which such problems arise. Wicked problems are impossible to solve partially or sequentially because of the inability to collect and analyze enough information to draw irrefutable conclusions. Different scientists draw different conclusions from different subsets or series of data. This leads to conflicting “scientific” studies because it is virtually impossible to isolate specific causes and effects. Apparent *causes* actually may be the *effects* of other causes somewhere in the system. Effort to solve one aspect of wicked problems may reveal or create other problems, as we have seen with the use of antibiotics and different “manure management” systems in CAFOs.

Wicked problems can be solved only by choosing different systems, which Wendell Berry refers to as *Solving for Pattern*. He writes, “A good solution is good because it is in harmony with those larger patterns – and this harmony will, I think, be found to have a nature of analogy. A good solution acts within the larger pattern the way a healthy organ acts within the body.”^{ix} The pattern of industrial agriculture is the pattern of a large, complex machine or mechanism with interchangeable parts. The natural ecosystems and social cultures within which farms function are living systems, not machines – organisms, not mechanisms.

A further problem in the case of agriculture, the farm or production unit itself is organismic system rather than mechanistic system. Organisms are unique wholes composed of unique organs or parts, with emergent properties that are not present in their parts – the most important being “life.” A healthy farm is an organism – a living system made up of soil, plants, animal, and people that constitute an integral whole. A CAFO is not a factory and animals are not machines, and should not be treated as such, no matter how emotional or unscientific that statement may seem. Problems such as the inhumane treatment of animals and destruction of biological diversity are inherent consequences of managing a farm as a factory.

The failures of industrial agriculture in general are an inevitable consequence of the inherent disharmony between industrial agricultural systems and the social and ecological environment within which agriculture must function. The internal mechanistic agricultural paradigm is in conflict with the external organismic social and ecological context. The only way to solve the wicked ecological, social, and economic problems of industrial agriculture is to shift away from

the mechanistic paradigm of industrial agriculture to a paradigm that treats agriculture as a living system. Agriculture must function as a “healthy organ within the body” of society and nature.

The agricultural establishment tries to make Americans believe that factory farms are necessary to keep retail prices for animal products at acceptable prices for American consumers and to provide food exports to other countries – to “feed the world.” However, the IPES report and numerous other studies and statistical data provide extensive evidence that an alternative non-industrial approach to farming and food production holds the greatest promise of both domestic and global food security and agricultural sustainability.

Thousands of new farmers are creating a new living systems paradigm for agriculture under the conceptual umbrella of sustainable agriculture: an agriculture that has the ability to meet the needs of the present without diminishing opportunities for the future. These farmers who may call themselves organic, ecological, regenerative, holistic, biodynamic, or just family farmers, are in the process of creating the new sustainable American food system. They likely still produce something less than 10% of America’s food, but they represent the fastest growing sector in the American food system. Non-industrial systems of animal production are becoming increasingly important part of the sustainable food movement. Informed, discerning consumers are providing economic opportunities for those producing animal products that are pasture-based, grass-finished, free-range, humanely-raised, hormone and antibiotic free, and others. John Wood’s *US Wellness Meats*^x in Canton is a prime example.

It will cost more to produce sustainably because farmers don’t impose the environmental and social costs on their neighbors and communities. However, the primary cause of retail price premiums for organic/local/sustainable products today is higher cost of processing and distributing the smaller quantities of products. An Iowa State University study comparing the economics of CAFOs compared with deep-bedded hoop-house systems showed approximately equal costs of production.^{xi} Various other studies show production cost advantages of \$3 to \$6 per head for CAFOs compared with pasture based systems. However, a 255 lb. finished live hog will produce about 140 lb. of retail pork. So, \$3 to \$6 per head higher costs for live hogs would amount to about 2 to 4 cents per retail pound of pork. With retail pork prices at \$3.00 per pound this would be about 1% difference in retail pork prices.

Of course, eliminating CAFOs wouldn’t necessarily ensure farming systems that were resourceful, resilient, regenerative, and thus sustainable. Industrial agriculture is a linear system in that it extracts the resources of nature and society and turns them into useful products and useless waste. Sustainable agriculture is a circular system in that it relies on the efficiency of nature’s productive processes to meet the basic food needs of people, while maintaining resilience and regenerative capacity of healthy living agroecosystems. Resilience and regeneration require some sacrifice in economic efficiency. However, the increased costs are affordable in the short run and are essential for long run sustainability. Sustainability requires balance and harmony among resourcefulness, resilience, and regenerative capacity in order to renew and regenerate the ecological, social, and economic sources of agricultural productivity.

Various estimates have shown that a transformation of the entire American food system from the current industrial system to sustainable food system would result in an 8% to 12%

increase in overall food prices. Retail food prices rose by more than that amount as a result of the corn ethanol/biofuels mandate, which took millions of acres of cropland out of potential food production. In fact, alternatives to industrial agriculture actually are far lower in cost when the ecological, social, and rural economic costs that CAFOs impose on society are taken into consideration. Most important, the industrial food system simply is not sustainable over time.

So, why do Americans continue to support a failed system of food production when viable, sustainable alternative obviously exist? Margaret Wheatley, one of the leading thinkers in the U.S. on issues related to institutional and cultural change, recently returned from an extended retreat where she contemplated the major trends shaping U.S. society. She identified three: 1) “A growing sense of impotence and dread about the state of the nation,” 2) “The realization that information doesn’t change minds anymore,” and 3) “The clarity that the world changes through local communities taking action—that there is no power for change greater than a community taking its future into its own hands.”^{xii}

I agree with Wheatley. First, I believe the prevailing mood about and within rural America today could be accurately described as “a growing sense of impotence and dread.” Fred Kirschenmann of the Leopold Center at Iowa State University has observed that the “predominant attitude *toward* rural communities is that they have no future. In fact, this attitude seems to prevail even *within* rural communities.” Secondly, I agree that information no longer changes minds. For decades the proponents of CAFOs and industrial agriculture consistently called for decisions based on “sound science.” Now that the sound-science has turned against them, the defenders of industrial agriculture have resorted to a multi-million dollar, nationwide propaganda campaign to restore “confidence and trust” in modern, industrial agriculture.”^{xiii} When the facts no longer support their conclusions, people simply find a new set of “facts.”

So where is the hope for the future of rural America? The hope is in Wheatley’s final observation: *There is no power for change greater than a community taking its future into its own hands.* I believe rural communities confronted with CAFOs should focus on protecting themselves to the extent that current laws will allow. However, I think they should also focus on issues of broad public concerns, as well as their own. Concerns such as environmental protection, public health, and animal welfare may not succeed initially in the political arena, but such issues have the power to change public opinions and attitudes. Changes in public opinion can change consumers’ food purchase decisions and ultimately can change laws.^{xiv}

All change begins locally, in the hearts and minds of individual people in communities. Local crises, such as the threats posed by CAFOs, can bring concerned community members together in support of a common cause – to defend the future their community. I have often said that local organizing in opposition to CAFOs is creating the future leaders of rural America. By focusing on broad public concerns, coalitions can be formed between rural and urban community groups, with financial support from larger nonprofit organizations. Local resistance against the continued destruction brought by industrial agriculture can help build strong communities – rural and urban. Industrial agriculture not only affects rural Americans, it affects the entire food system and the health and well-being of all Americans.

There are still many vibrant and viable rural communities in America. There are places that still have clean water, clean air, scenic landscapes, and people who care about the land and about each other. There are still possibilities for vibrant agricultural communities wherever rural people are willing to reject industrial agriculture and support new systems of agriculture that produce good, healthful food while contributing to a desirable quality of rural life. Rural people need not continue to live with the sense of “impotence and dread;” there are positive possibilities for a new and better future. It may not be easy, but it is possible to protect rural communities from CAFOs when rural people work together for the common good. I agree with Margaret Wheatley, the success of solving the “wicked problems” of CAFOs and realizing a new and better vision for rural America ultimately depends on the *power of community*.

End Notes

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^x U.S. Wellness Meats, <http://grasslandbeef.com/> .

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^{xii} Margaret Wheatley, “The Big Learning Event,” Prepared for presentation at the University of Wisconsin, Madison, WI, June 2011.

^{xiii} Food Dialogues, U.S. Farmers and Ranchers Alliance, <http://www.fooddialogues.com/>

^{xiv} John Ikerd, “Growing Pubic Concerns about CAFOs,” Prepared for presentation at *CAFO Conference*, sponsored by Peach Bottom Concerned Citizens Group, York, PA; September 7, 2013. <http://web.missouri.edu/~ikerdj/papers/PA%20-%20York%20-Going%20Public%20CAFOs.htm> .