

American Food Systems in Grinnell, Iowa

Sam Foreman – *Grinnell College*

The process that food consumed in America goes through to make its way to our mouths is like a Rube Goldberg contraption. The seemingly straightforward process of growing, raising, harvesting, and slaughtering goes on every day, completely hidden from consumers. Very few Americans are aware of the highly complicated, mechanized, and convoluted journey that any given bite of food takes from its origins in nature (or some manipulated approximation of it) to its destination on our plates. Although some people criticize the state of our food system, it is clear that it grew to be the international machine that it is because of demand. More than 300 million Americans want lots of food—meat especially—and they want it cheap. So like every other production process in this country, our food system was industrialized to produce maximum food calories for the American people at minimum cost. The industrialization of our food system has allowed for population increase and higher standards of living.

But there are significant problems with the industrial food system. Caught up in a drive to maximize production and profit, the industrial food system grew to a size that is not sustainable. On the path to industrialization, concern for the environment and the animals we eat took a back seat to expansion. Specialization, rather than integration, became the hallmark of America's farms. Rather than having chickens, hogs, corn, and hay all on one farm, all these things now reside on separate, much larger farms. There is, however, a very separate food system that supplements the industrial food system: the local food system. Local food systems cater to people who, for varying reasons, believe that it is better to “buy local” or from a smaller, usually family-owned farm rather than from a supermarket with less expensive mass-produced food. There are few places where the two food systems are as visible and distinguishable as in Grinnell, Iowa. Poweshiek County has a diverse population (of farms in terms of size) as illustrated by this graph taken from the 2002 Census of Agriculture County Profile of Poweshiek, Iowa (Figure 1, below). As a resident of Grinnell for the past couple months, I have become very familiar with the faces of the two food systems. Wal-Mart, Hy-Vee, Monsanto seed, and Fremont Farms are the incarnations of our industrial food system, while Café Phoenix, the farmer's market, and the various family farmers who participate in Community Supported Agriculture programs represent our local food system here in Grinnell. I have become even more familiar with the producers of food in Grinnell through conducting my research, which was primarily done through personal interviews. The interview was a valuable method of research for me because I was able to get a good sense of the interviewees' perspectives, understand their arguments, and sometimes even offer counterpoints in order to force even deeper discussion of the issues I plan to address in this article.

During my time at Grinnell College, I have acquired a very basic understanding of our food systems. Through both reading and personal interactions I have come across all kinds of opinions and arguments from proponents of both small-scale agriculture and large-scale agriculture. One theme that everyone agrees on is that the world is a changing place. Serious economic and environmental challenges are on the horizon. The current state of our food system in the United States is key to how well the industry will adapt when change comes. The American food system needs significant modification in order to guarantee that we can eat healthfully and protect the natural workings of the planet we depend on. The most important

change that could be made is a return to methods of food production that resemble nature's traditional processes, rather than methods that manipulate nature to work like a factory.

Grinnell is a great place to begin to examine exactly what changes have been taking place in our food system. In Grinnell, as has been the case across the country, there has been a strong trend in agriculture towards larger farms, fewer farms, and fewer farmers on each farm. According to the most recent county census of agriculture (taken in 2002), the number of farms in Poweshiek County has fallen 8% since 1997, and the average size of county farms has grown 8% during the same time period. While growing bigger and industrializing, farms have also changed the nature of their operation to maximize short-term efficiency and profit at all costs. An example of this trend would be maximizing cropland by demolishing buildings on the farm that used to house livestock or by planting on hilly ground that is prone to erosion. In effect, too much farmland is used to grow crops, and not enough of it is left for livestock to graze on, throwing off the natural ecosystem. This is supported by the 2002 Census of Agriculture of Poweshiek County, which shows that 85% of all farmland in Poweshiek County is used to grow crops while only 5.5% of farmland is open pasture. This great discrepancy begs the question, if so little land is used for pasture and so much is used to grow crops on, where and what do the livestock of Poweshiek County eat?

For the most part, livestock—especially those commonly consumed like hogs, beef, and poultry—have been taken off the farm and now reside in an invention of the industrial food system: the Concentrated Animal Feeding Operation, or CAFO. In a CAFO hundreds of thousands of animals live together, eating the grain (corn for the most part) that is grown on the land where they grazed green grass long ago. These CAFOs are the prototypical example of how the industrial food system has re-arranged nature to provide the ultimate value added service: turn cheap, government-subsidized corn into protein and calories, in this case meat. During a phone interview, Professor Mark Honeyman of Iowa State University pointed out to me that, by definition, agriculture is the manipulation of nature to turn solar energy into caloric energy for our consumption. This clearly logical assertion forced me to stop and ask myself why, if agriculture was by nature manipulating plants and animals, is there anything wrong with the way food is mass-produced in our country today? I quickly reminded myself that there are different degrees of manipulation. The environmental impact of Barney Bahrenfusse, the owner of a farm of around 500 acres in Grinnell, who keeps goats on his farm because they like to eat weeds, is minimal, because he is not changing anything about the goat's natural habits. Goats like to eat weeds. Greater degrees of manipulation often thwart the animal's natural instincts, reducing their existence to little more than converting grain into meat. It should be added that small farms are not all good and big farms all bad. CAFOs recycle their animals' waste, just as Barney does on his farm. The only difference is that, while Barney hauls his animals' poop across his smallish farm, CAFOs do not usually have farmland of their own and sometimes (because they do not depend on the soil in any way) are not even located anywhere near farmland, thus having to truck the manure to a buyer, using precious fossil fuels in the process. In a paper entitled "Sustainability Issues of U.S. Swine Production," Professor Honeyman points out that to optimize sustainability, "The relationship of swine population to arable land is important. Large Swine production units [CAFOs] built on small acreages or not part of farms that also produce feed grains can have manure utilization problems" (1415). This is certainly not a problem in Iowa, where fecund soil is, well, everywhere. The CEO of Fremont Farms, Steve George, whose farm holds about 9 million laying hens that lay eggs for liquid egg products in Malcolm, IA, does not have to look far to find a farmer in need of the waste his hens create. Animal waste is usually

well dealt with by CAFOs; after all, it is not only environmentally conscious, but also profitable to sell your animals' waste as fertilizer.

There are, however, ways in which CAFOs are clearly less earth-friendly than traditional farming. The first way is that they are generally farther from farmland that needs fertilizer, and so the animal manure needs to be transported; a considerable waste of fossil fuel. This also contributes to pollution and global warming, problems we all pay for. Another problem with CAFOs centers around the health of the animals they produce. By separating the animals from their natural habitat, and by constantly feeding them sub-therapeutic levels of antibiotics in their feed, the animals' natural robustness is weakened. Incidentally these practices create antibiotic resistant bacteria, a threat to the health of humans as well as the animals that host these super-bacteria. There is much debate about what is the healthiest and safest environment for an animal. Steve George told me in a phone interview that he wouldn't want his chickens roaming around outside, because of all the dangerous pathogens that lurk outdoors. By keeping his hens indoors, he is able to protect them from disease and keep them big and productive by feeding them feed with growth-promoting antibiotics in it. In the other camp there are Barney Bahrenfuss and Suzanne Costello, who run B & B Farms in Grinnell. According to Barney they raise 600 chickens each year. They let their chickens peck around outside in addition to feeding them feed Barney grows and produces himself. As Suzanne put it, "There's a divergence in mentality; one way of looking at it is there's this horrible world out there that we're all at war with," and then there's the way Barney and Suzanne handle their chickens: "If [the chickens] are getting fresh air, and they're getting greens, and they're getting all these things, they're healthier beings and they're less susceptible. So the way we view it is, you beef up their health and you don't have to worry about it." Based on direct observation I would have to say they are right. It just so happened that on a drive-by tour of Fremont Farms I had the pleasure of observing a truck full of dead hens being covered for highway transport. Apparently about 10% of laying hens in CAFOs simply can't endure their situation and die, a fact that is built into the cost of production (Pollan 318). In the close confinement that CAFO-bound laying hens exist in, "Every natural instinct [is] thwarted, leading to a range of behavioral 'vices' that can include cannibalizing her cage mates and rubbing her breast against the wire mesh until it is completely bald and bleeding" (Pollan 317). Barney mentions no such problems among his chickens (then again, neither did Steve). Obviously there are many hundred thousand more chickens living at Fremont than at B & B, but that truckload (which may very well have been full of chickens who lived a full life) stands in stark contrast to the three chickens at B & B that "Crapped out," as Barney put it.

There is also evidence that CAFOs are bad for people who live around them as well as the animals who live in them. In his paper, Honeyman also cites that

More than twenty years of studies have consistently shown the negative influences of large-scale specialized farming on rural communities (Allen, 1993). Lobao (1990) found that "an agricultural structure that was increasingly corporate and non-family owned tended to lead to population decline, lower incomes, fewer community services, less participation in democratic processes, less retail trade, environmental pollution, more unemployment, and an emerging rigid class structure." (1413)

In addition to these findings, large CAFOs—especially hog or beef feeding operations—create public nuisances in other ways. Because there can be hundreds of thousands, if not

millions, of animals living in a densely populated environment, their waste becomes a problem. CAFOs pool the animals' feces in vast open cesspools that can cause huge environmental issues in addition to attracting clouds of flies that plague anyone living near the CAFO. It is clear that there are major drawbacks to the current industrial method of raising animals. But the question is: what choices do we have? There are more than 300 million people living in the U.S. who need to eat, and eat on a budget.

Proponents of large-scale agriculture argue that it is cheaper and more efficient to produce food following an industrial model. Judging by price tags, they may be right. Often vegetables at a farmer's market fetch a higher price than those sitting in the supermarket do. But the supermarket is not the only place we pay for our industrially produced goods. Mark Honeyman pointed out to me, citing work he read by J.E. Ikerd, a professor emeritus of agricultural economics at the University of Missouri-Columbia, that many of the costs of mass-produced agriculture are hidden. For instance, we all pay taxes to the government, which in turn spends billions of tax dollars a year subsidizing the industrial food system. Between 2003 and 2005 the government spent an average of \$11.5 billion dollars per year on crop subsidies, 47% of which went to the top 5% of beneficiaries (Environmental Working Group). This means we are subsidizing a lot, and mostly to the biggest agribusinesses. Family farmers, for the most part, receive no government subsidies. So when I told Barney and Suzanne that I repeatedly heard from people involved in large-scale agriculture that family farming is nice, but ultimately not very profitable, if even viable at all, Suzanne was quick to respond: "You take away [the industrial farms'] government subsidies, they don't work. We don't take any government subsidies, so who's viable?" But during our talk, Steve, of Fremont Farms, correctly pointed out to me that they receive no government subsidies. I looked it up and he was right. According to the Environmental Working Group's website, which gets its statistics from the United States Department of Agriculture, except for a paltry \$5,361 in corn subsidies, between 1999 and 2000 Fremont Farms received no government subsidies at all. No direct subsidies, that is. It is important to remember that their operation is indirectly subsidized by the artificially low price of corn in their chickens' feed. By subsidizing the largest producers, the government encourages large-scale agriculture to re-arrange itself along the lines of a machine, operated with chemical inputs and minimal human management, and measured by output.

It is much harder to offer a solution to our increasingly problematic food system than it is to point out the flaws in it. Some experts, like Bill McKibben, point to local food systems as a more earth-friendly and sustainable solution. Others, like Mark Honeyman, propose many "modest-sized" diversified family farms. Both are plausible solutions, but critics claim that an industrial food system is the only way to feed a country with the size and appetite of the United States. But smaller farms do not necessarily mean less food. Integration is the solution. Instead of having one huge corn farm and one huge pig farm completely separate, we should have several smaller integrated farms. Same number of hogs and acres of corn, just split up. Instead of agriculture existing in enormous monocultures, farms would resemble independent ecosystems. This would simplify and reinforce the nutrient cycle and the health of the farm as a whole. Some might say that this would just be backtracking several decades in agricultural history. But really, any change made to improve sustainability would, without a doubt, would be a progressive change.

The key to implementing a more sustainable future for our food system is a multilateral effort by the government and consumers. To reshape our food system there needs to be a concerted effort by the government to refocus their subsidies and greater awareness on the part

of consumers, because ultimately the consumers have the greatest effect on what the food system produces while the government influences how they do it. Many of the individuals I interviewed noted a growing movement towards local, fresh, chemical-free foods. Tom Lacina, of Pulmuone Wildwood, noted the continual increase in sales of organic foods in the U.S. Mark Honeyman observed the proliferation of niche pork markets such as antibiotic-free and grass-fed pork. Locavore (n.), meaning one who seeks out locally produced food, became the latest word to be added to the New Oxford American Dictionary. The movement is clearly alive in Grinnell, Iowa. Many professors and students are conscious of what they eat, and during the growing season local foods are plentiful. From May until October there is a fledging farmer's market in town. Some local restaurants, most notably Café Phoenix, make a point of buying local whenever it's possible. But there are also strong signs of the entrenched industrial food system. Wal-Mart and Hy-Vee supply cheap, mass-produced food, mostly to the townspeople of Grinnell who generally do not have the economic means that people related to the college do. This trend is not unique to Grinnell. As Tom Lacina concisely put it, "The top half of the society is willing to pay for local, pure, organic. They have the time to shop, they have the education to shop." But fresh, chemical-free food should not be limited to those with the money and awareness needed to shop locally. If government subsidies could be used to encourage more, smaller farms to produce goods for smaller regions, they could effectively strengthen local food systems and maintain the same cheap prices that supermarket shoppers enjoy today.

There is a clear set of goals for our food industry that we, collectively, as Americans, have to work to achieve. Our food has to be produced in an environmentally friendly way. Our food system must achieve sustainability, meaning it should be able to operate indefinitely in its current state. Our food must be produced in a manner that respects the plants and animals that create calories for our consumption, and the system must reward the farmers as well. The key is to recreate a system of farming that mimics nature rather than a factory. With that said, there are still daunting obstacles in the way of progress. Most Americans enjoy the quantity of cheap food available in supermarkets across the country. To ensure change, Americans have to cast off the myopia that allows us to enjoy the state of our food system without worry for the future. As a country we must plan ahead for a time when cheap fossil fuel, antibiotics, and government subsidies will not keep a grossly unnatural food system running smoothly.

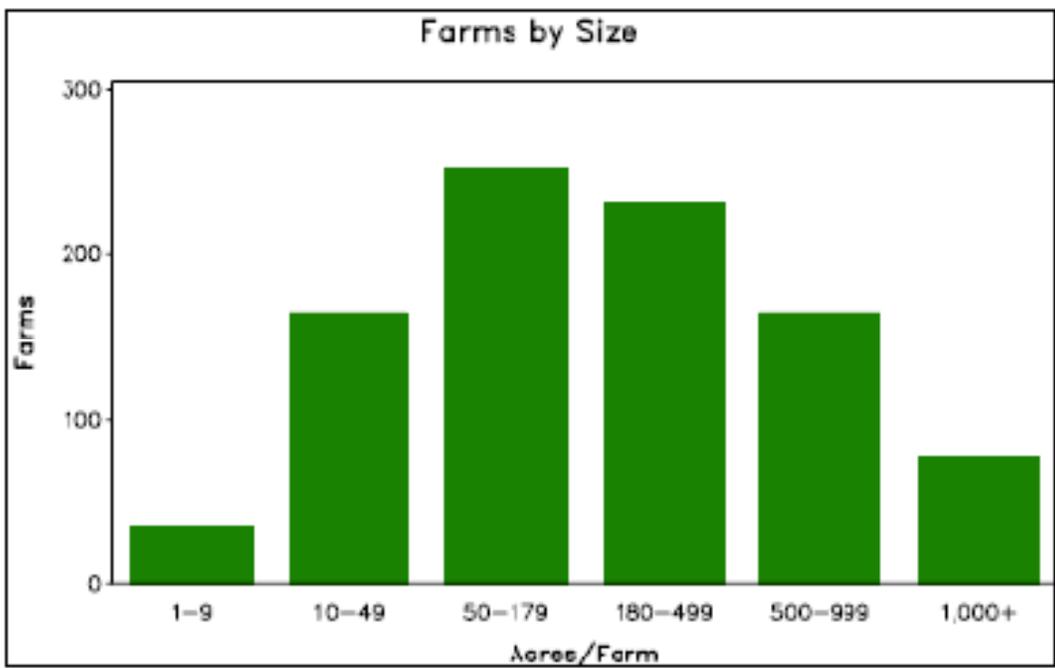


Figure 1 – Farms by size in Poweshiek County, Iowa.

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