

Do We Need Large-Scale Confinement Animal Feeding Operations?¹

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Most people in the *agricultural establishment*³ seem to accept large-scale confinement animal feeding operations (CAFOs) as an economic necessity. They see the trend away from smaller diversified family farms and toward larger specialized, confinement operations as being driven by impersonal market forces, tending toward ever-greater economic efficiency. They point out, often without any supporting evidence, that CAFOs are more economically efficient than are smaller non-confinement operations. They claim the trend toward CAFOs is a logical market response to consumer preferences – that consumers demand, or at least prefer, the uniformity of quality achievable only with standardized production systems.

Livestock farmers are told that they must adopt the new industrial technologies that make CAFOs feasible, if they expect to have a future in farming. Current changes in the meat animal industry are inevitable, they are told, because they are driven by the irresistible forces of a free market economy, and thus, cannot and should not be controlled. Leaders in agricultural communities are told they must accept, if not embrace, this new kind of industrial agriculture, or their communities will be left behind. CAFOs are needed to support local jobs, local tax dollars, and related local economic development. Rural residents who oppose CAFOs are labeled as naïve, idealistic, uninformed obstructionists to economic progress.

The public, in general, is told that even more CAFOs will be necessary to feed the hungry people of a rapidly growing global society. For this reason, the *agricultural establishment* proclaims, we must continue to expand our productive capacity, even during time when markets are depressed by surplus production. While the wealthy of the future may continue to be well fed, we must have abundant supplies of cheap food, including cheap meat, if the poor are to be spared from hunger and malnutrition. CAFOs are needed for humanitarian reasons, so we are told.

But, what is the validity of these claims. Do farmers need large-scale confinement animal feeding operations to achieve efficient, low-cost production? Do we need an industrial, standardized meat production system to satisfy consumer preferences? Do farmers and rural communities need these large-scale, corporate contract operations to provide employment and economic development opportunities? Do we need an industrial approach to agriculture to feed the poor and hungry of the world? The answer to each of these questions is, NO! All popular myths are supported by elements of truth. But, the elements of truth in these cases are not sufficient to validate the truth of the popular claims regarding CAFOs. No one really needs CAFOs.

¹ Presented at Food and Society Networking Conference, panel on Revitalizing Non-Confinement Raised Meats, sponsored by the W. K. Kellogg Foundation, Olympic Valley, CA, April 20-22, 2004.

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³ The *agricultural establishment* refers to corporate agribusinesses, commodity organizations, some farm organizations, including the Farm Bureau, the US Dept. of Agriculture, and Land Grant Universities.

Do we need CAFOs for efficient, low cost production?

No! The claim that large-scale confinement operations are more efficient is a myth – widely promoted, but still a myth. The element of truth in this case is that large-scale, CAFO operations, in general, are more efficient than are many smaller, non-confinement operations. The reality, however, is that many, if not most, smaller, non-confinement operations are more efficient than are the larger confinement operations. Also, many smaller hog operations are not nearly as efficient or as profitable as they could be.

For sake of brevity, the specific comparisons provided here are limited mostly to hog and pork production. However, similar relationships exist for comparisons of large-scale, confinement beef, dairy, and poultry operations with smaller, non-confinement systems. In the case of beef and dairy production, the most popular non-confinement alternative is grass-based operations. In the case of poultry, the more promising alternatives are pastured and free-range chicken, turkey, and egg production. For hogs, two popular alternatives have emerged. One alternative includes a wide range of “pasture-based” systems, most of which include some type of housing for some part of the production period, but allow hogs free access to pasture most of the time. The other alternative involves “hoop house” production, including both farrowing and feeding operations, where hogs are produced in deeply bedded greenhouse-like structures.

Confinement, pasture, and hoop house operations may vary widely in size. However, a typical pasture or hoop-house production unit might involve 50-100 sows or 1,000-2,000 market hogs, whereas a typical large-scale confinement unit might involve 600-1000 sows or 12,000-20,000 market hogs. Both pasture-based and hoop house hog production systems avoid many of the animal health, human health, animal welfare, and waste disposal problems associated with large-scale confinement animal feeding operations. Most of these problems quite simply are unavoidable when too many animals and too much waste are confined in too little space.

Returning to the question of productivity and economic efficiency, state universities that have maintained swine record systems over the years have shown consistently that smaller “well managed” hog operations are more efficient and have lower production costs than do “average” mega-sized hog operations. Typically, the most-efficient one-third, sometime up to one-half, of smaller operations is shown to be more efficient than are “average” mega hog operations. For example, Iowa Swine enterprise records for 1995 showed an average cost per hundredweight of \$39.67 for the mega operations, compared with only \$33.06 for the most-efficient 10 percent of Iowa producers and \$36.07 for the top one-third. The average for smaller hog operations was \$40.53, less than \$1/cwt. more than for the mega operations (Kliebenstein, Lawrence, and Duffy).

The element of truth supporting the efficiency myth is that mega operations tend to be more “consistently efficient.” Thus, mega operations, in general, may be more efficient than the “least efficient” one-third, or possibly one-half, of all smaller operations. Thus, larger operations are able to survive and make profits at price levels that will drive these “less-efficient,” smaller producers out of business. Consistency in efficiency has allowed larger CAFO operations to get a strong foothold in the hog-pork industry, even without having any inherent advantage in overall economic efficiency.

The one-third to one-half of smaller operations that are already more efficient than CAFOs have opportunities to become even more efficient in the future, through more-effective management of their unique types of operations. A major obstacle for smaller producers today is the lack of encouragement and support from the *agricultural establishment*. As the ISU researchers cited above point out, many of the technologies that typically give large operations an economic advantage are adaptable to smaller operations, but are simply less frequently used by smaller operations. In addition, very little research and extension work has been devoted in recent years to improving the efficiency of non-confinement livestock operations.

Hoop house operations are the latest technological competitor with confinement hog operations. A North Dakota study indicated a net return per pig of \$33.19 for the hoop house system, compared with \$31.84 for hogs produced in confinement and \$30.99 for hogs produced in outdoor pens (Landblom, Poland, Nelson, and Janzen). Another Iowa study, comparing economic efficiency of hoop house and confinement hog feeding systems, showed a slightly higher cost per cwt. for the hoop house system, \$39.97 compared with \$39.58 (Kliebenstein, Larson, Honeyman, and Penner). But the researchers calculated that hoop house operations would show a higher net return on investment at hog prices above \$55 per cwt. and at feed prices less than 7.25 cents per lb., because of differences in feed efficiency and initial investment costs. Finally, Livestock Enterprise Budgets for Iowa for 2003 show a breakeven selling price for farrow-to-finish hog operations “on pasture” of \$43.56 compared with a breakeven selling price of \$43.60 for farrow-to-finish operations in “total confinement” (May, Edwards, and Lawrence).

The bottom line of all these comparisons is the economic efficiency is not significantly different among confinement, hoop house, or pasture based systems of hog production. Individual management ability has a far greater impact on efficiency and profitability than does the type of system. These facts are rarely contested among those who are familiar with cost of production data for the various types of hog production systems. There simply is no compelling economic efficiency advantage for large-scale CAFO operations.

So why do some farmers choose CAFOs instead of hoop house or pasture systems? Primarily because CAFOs are easier to manage, and thus, each producer can manage more hogs. If a confinement producer can produce and sell more hogs, he or she can make more profits in total, even if profit per hog sold is no more, or even less, than profits for hogs produced in non-confinement systems. For example, a 100-sow non-confinement farrow-to-finish hog operation might yield a net return to management of \$6 per cwt., \$15.00 per pig, for a total of \$30,000, assuming 20 market hogs sold per sow, per year. A confinement hog producer, with no more management ability or commitment of time, might be able to manage 2 to 3 times as many sows as the non-confinement producer. Thus, the return to management per market hog would only need to be only \$2-\$4 per cwt., rather than \$6 per cwt., to generate the same \$30,000 return to management. So, hog producers are lured to CAFOs by the false promise of a higher total return to management, only later to realize that lower returns per head sold have erased any advantage.

Do we need CAFOs to satisfy consumer preferences?

No! The claim that the trend toward large-scale confinement animal feeding operations is being driven by consumer demand is another industry-promoted myth. The element of truth in this myth is that consumers do prefer, if not demand, “consistency” in their products. We want the

pork chop we buy this week to taste the same as the one we bought last week, if we buy the same kind of chop in the same store, and if it looks the same as the one we bought last week. Consistency is necessary if we are to be able to choose the things that will provide us with satisfaction and avoid the things that will not. But, this natural preference for consistency does not mean, or even suggest, that we all want the same thing. Consistency and variety are two distinct concepts. We don't all prefer pork chops that look and taste the same.

In fact, a basic premise of economics is that consumers have different tastes and preferences. In basic economic theory, the utility or usefulness of anything is determined by form, place, time, and possession or individuality. To know what anything is worth, we must first know what it is (form), where it is (place), when it is available (time), and finally, who has it and who wants it (individuality). The same thing at the same place at the same time may have a different value to any two individuals. We don't all prefer or value the same things. To respond effectively to consumer preferences, we must give different people the different things that they individually prefer, not give them all the same thing.

Economies of scale in industrial production arise from specialization and standardization of production processes. Once production has been specialized and standardized, it can be routinized and mechanized, so that it can be carried out at lower costs, in large-scale operations. Large-scale food processors, distributors, and retailers gain their economic advantage in the market place by specializing in the performance of standardized functions. They achieve greater economic efficiency in processing (changing form), distribution (changing place), and packaging/storage (changing time), only if they can convince large numbers of consumers to accept the same specialized, standardized products (to ignore their individuality).

The demand for uniformity in pork production, for “standardization,” today is coming from food processors and distributors, not from food consumers. Pork processors and distributors, not consumers, benefit from a system characterized by consistency in breeds, feeds, medications, growing environment, and market weights. To achieve this consistency, they must have control of the system. The desire for consistency and control by processors and distributors, not consumer preference, is the driving force behind the trend toward large-scale CAFO production – specifically toward corporately controlled, “contract” production.

Any cost advantage that might accrue to consumers from lower returns to management at the production level are minimized by the fact that more than eighty-percent of the total cost of retail is accounted for by costs of processing, distribution, packaging, advertising, etc., and only twenty-percent represents costs of the live hogs. Thus, a \$2 to \$4 per cwt. lower return to management for confinement hog producers translates into only 0.40 to 0.80 cents per pound for pork – less than a penny on each dollar spent for pork in the supermarket. This seems rather little compensation for the consumers' loss of choice, of sovereignty, in the market place.

Processors and distributors of pork, beef, and milk are attempting to follow the vertical integration model developed in the poultry industry. Once a few large poultry integrators had gained control of the industry – through comprehensive production contracts with growers, utilizing large-scale poultry CAFOs – they were able to stabilize poultry supplies and prices at levels that essentially ensured the long run profitability of their operations. The incentive for

consistency and control is to enhance corporate profits – not to satisfy consumer preferences. Once markets lose their economic competitiveness, i.e., are no longer characterized by a large number of small firms, the consumer is no longer “king.”

Do we need CAFOs for farmers and rural communities?

No! The myth that CAFOs will provide desirable employment opportunities is most used to promote agricultural industrialization among farmers and rural community leaders. The element of truth supporting this myth is that the economic viability of traditional mid-sized family farms is in question, as is the future of many rural communities. Over the past few decades, numbers of small, part-time farming operations have increased modestly and large-scale, contract operations have increased dramatically, but the “farmers in the middle” are disappearing. Fewer farm families mean fewer people to shop on “Main Street,” to attend local schools and churches, and to participate in local public affairs. In addition, the smaller farming operations, although larger in number, produce a small proportion of total agriculture products using a small proportion of agricultural inputs. The large agribusiness operations often by-pass rural communities, both in purchasing inputs and marketing their products. Thus, rural communities suffer economically and socially as the “farmers in the middle” disappear.

The fallacy in this argument is that communities who welcome CAFOs to their area will only exacerbate the problems of decline in family farms and rural economic decay. For example, the number of hog farms in the U.S. dropped from almost 700,000 to less than 100,000 between 1980 and 2002, the period during which CAFOs largely replaced diversified family hog farms (USDA-NASS-1). Obviously, the trend toward more CAFO operations has been a primary cause of this decline in family hog farms. How can still more CAFOs, be considered as a logical solution to the problem? Certainly, a larger proportion of the surviving hog farmers have large corporate-contract, CAFO operations, but this is true only because a larger number of smaller family-sized hog operation have been driven out of business by CAFOs.

Some farmers and some communities may view the survival question from a purely selfish perspective. Even if more large CAFO operations mean fewer family farms and fewer viable rural communities, at least “their” farm or “their” community will survive. If one farmer doesn't build a CAFO, another one will. If one community doesn't welcome CAFOs, another one will. The farmers who refuse the CAFO option and the communities that discourage CAFOs in their area simply may not survive. Again, there are elements of truth in these arguments, but also fundamentally fallacies.

The fact of the matter is that CAFOs are an integral part of a corporately controlled food chain, in which producers have no power to bargain for a profit or even for an equitable return on their investment. Even in cases where producer-owned CAFOs are not yet under corporate contract, they soon will be. As is the case for poultry, and increasingly for hogs, CAFO producers who are not under contract will find they have no markets. And once under contract, they have no bargaining power to negotiate for fair and equitable treatment. In addition, contract producers make none of the important production and marketing decisions, take very little production or market risk, and thus, have little opportunity to realize profits. They are hog house landlords and contract “janitors,” but certainly are not farmers, in any traditional sense of the occupation.

As rural communities that welcome CAFOs soon discover, the promised positive effects on the local economy never materialize. Virtually all of the economic benefits go to corporate investors and managers who live nowhere near communities where their contract operations are located. In many cases, communities have granted tax incentives to outside investors, which have erased any potential benefits from increased property taxes. In others, the increased demands on local public services, including road and bridge repairs, have added far more to local government costs than corporate agriculture has added to local tax revenues. The new jobs created by CAFOs are far fewer than the family farmers they displace. Most children from these communities still leave for better opportunities elsewhere. And, those who remain behind are left with the dissension among neighbors and the ecological mess that invariably accompanies CAFOs as they enter a community. Farmers and rural communities don't need CAFOs.

Do we need CAFOs to feed the poor and hungry of the world?

No! It's difficult to find an element of truth in this popular myth. If one exists, it's probably that it takes fewer people to produce more meat, milk, or eggs in CAFOs than in non-confinement animal operations. In the case of hogs, various studies have shown that CAFOs may require only 33 to 85 percent as many workers as non-confinement operations to produce a given number of hogs – depending on the nature of the comparisons. If a country has a scarcity of people capable of producing hogs, CAFOs may provide a significant advantage in producing pork. However, if a country has a surplus of employable people who need to be productively employed, CAFOs will simply make employment problems worse.

Nothing to date indicates that CAFOs increase a country's production capacity. For example, trends in U.S. hog production over the past fifty years show no significant increase in pork production (USDA-NASS-2). During this period, hog production in the U.S. shifted dramatically from nearly all hogs produced on small, diversified family farming operations to a large percentage of all hogs produced in large-scale, CAFOs. The flat trend in long run pork production is paralleled by a similar trend in the number of sows farrowed between 1994 and 2004, a period of rapid transformation to large-scale, contract CAFOs in the U.S. (USDA-NASS-3). The trends in consumption of pork and other meats over the past fifty years simply parallel trends in population and in shifting consumer tastes and preferences rather than trends in production capacity. Nothing indicates that the U.S. could not produce much more pork and other meats than are being produced today without relying on a single CAFO operations.

Global population may well double again by the middle of the current century. But, nothing indicates that the U.S., or others country of the world, will be better able to produce enough meat to feed the poor and hungry people of the world with CAFOs than with non-confinement animal operations. In fact, there is reason to believe the trend toward large-scale, corporately controlled CAFO will result in more, rather than fewer, hungry people in the future.

The real issue in feeding the world's hungry is not total production capacity, but instead, the unequal distribution of income and wealth between the hungry and the well fed. The corporate industrialization of animal agriculture will put control of meat production in the hands of a few giant multinational corporations, which will be motivated solely by the necessity for profits and growth to satisfy their stockholders. Those who can afford to pay the price of meat necessary to generate those profits will eat and those who cannot afford the price will not. In addition,

turning potential family hog farmers into corporate “serfs,” through oppressive contractual arrangements, will simply serve to widen the gap between the haves and have-nots – leaving even more people without money, without meat, and without food. A far more logical approach to feeding the hungry is to enable more people in more places, all around the world, to produce their own hogs and pork, on a modest scale, in their own countries and communities. That way, more people can both eat well and earn additional income to meet other needs.

It may take larger numbers of more thoughtful hog farmers, in the U.S. and around the world, to produce enough hogs to feed more people better with non-confinement operations than it would take to produce the same number of hogs in CAFOs. But, it's far more likely that the hogs will be produced and that the poor will be well fed if hogs are produced in smaller, geographically dispersed non-confinement operations. And, what's wrong with providing more employment opportunities for more people – in hog farming or in any other respectable occupation? Nothing indicates that we need large-scale, corporate CAFOs to feed the poor and hungry of the world.

Since we don't need CAFOs, what do we need?

We need to develop an animal agriculture capable of equitably meeting the needs of all people of the present while leaving equal or better opportunities for those of the future. We need a sustainable animal agriculture. A sustainable agriculture must be ecologically sound, socially responsible, and economically viable. An agriculture that degrades or destroys its ecological environment or its natural resource base cannot maintain its productivity over time, and thus, is not sustainable. An agriculture that fails to meet the needs of people – producers as well as consumers, the poor as well as the affluent – will not sustain society, and thus, will not be sustained by society. And, an agriculture that is not at least periodically profitable is not financially viable, and thus, is not sustainable – not matter how ecologically sound or socially just it might otherwise be. Ecological integrity, social responsibility, and economic viability are all essential for sustainability.

Using these basic criteria, an industrial agriculture – including meat, milk, and egg producing CAFOs – quite simply is not sustainable. These systems degrade the environment and deplete the natural resource base, they are not equitable or just for either producers or consumers, and thus, they are not economically viable over time. CAFOs do not represent a sustainable approach to animal agriculture.

Thankfully, livestock and poultry farmers all across the American continent and around the world are creating a new, sustainable paradigm for animal agriculture. These new farmers include the grass-based beef, sheep, goat, and dairy farmers; the pastured and free-range poultry and egg farmers; and the pasture-raised and hoop house hog farmers. They may sell their products labeled as organic, biodynamic, natural, humanely raised, grass-fed, hormone and antibiotic free, or locally grown. The commonality that transcends all of these new sustainable enterprises is the integrity of their relationships with their customers, with their neighbors, and with the natural environment. These new farmers care about people and they care about the land. Most market directly to their customers at farmers' markets, through CSA organizations, through the internet or by mail order. Increasingly, however, these new sustainable farmers are finding ways to reach more like-minded customers through higher-volume marketing channels.

Patchwork Family Farms is a marketing organization representing 15 independent family hog farmers located in mid-Missouri. Patchwork markets to local customers through the Missouri Rural Crisis Center office located in mid-town Columbia. They also market through a number of restaurants in Columbia, Kansas City, and St. Louis and through several local supermarkets. Their internet site lists their growing standards: “Growth hormones or synthetic growth promoters are prohibited, No continuous feeding of antibiotics, Animals must receive adequate amounts of sunshine, fresh air and quality feed necessary to maintain good health, Animals are raised with social responsibility, using environmental stewardship and sustainable growing practices” (<http://www.patchworkfamilyfarms.org/ogs.html>).

New Seasons Market operates four food supermarkets in the Portland, Oregon area. As they explain on their website : “Three families and about fifty of our friends decided in late 1999 that we wanted to create a business that we could be proud of – a company that had a true commitment to its community, to promoting sustainable agriculture and to maintaining a progressive workplace (<http://www.newseasonsmarket.com>). Their stores look pretty much like any other modern supermarket, with delis, bakeries, and other amenities American food shoppers have come to expect. Once inside the store, the most noticeable difference is that virtually every item in the store is labeled with respect to origin and there is an “organic” option for nearly every food item. Also, many of the origins of food products are pretty close to Portland, OR and these labels often include the names of the farmers as well. In the case of regular suppliers, such as their provider of pork, a pamphlet provides a story of the history and nature of relationships between the Market and its farmers. As they say on their website, “Locally owned and operated means being an active and committed participant in the community; because our kids go to school with your kids. Locally owned and operated means buying from small vendors and supporting the development of our regional food economy. Locally owned and operated means being in touch with our customers.”

Good Natured Family Farms is a cooperative made up of 30-some farmers in southeastern Kansas and southwestern Missouri. They market their products primarily through Hen House Markets in Kansas. Hen House is a 13-store supermarket chain operated by Ball Foods Inc., a family corporation with a long history in Kansas City. Good Nature Family Farms (GNFF) fits in well with Ball Foods' commitment to maintaining its local connections. GNFF has developed an expanding line of branded food products, which now includes beef, chicken, eggs, and milk, with other products in various stages of development. As GNFF states on their website, “We have three goals: Support local farmers by providing them with a market for the food they raise, provide our customers with fresh, natural foods raised humanely, without hormones or sub-therapeutic antibiotics, and raise our beef, chicken, eggs, and milk in a matter which protects and conserves the precious resources upon which they rely” (<http://www.goodnatured.net>). Last year, GNFF products marketed through Hen House Markets totaled more than \$4 million.

These are just three examples, from dozens, if not hundreds, that could be cited of various means by which sustainable, locally produced foods are being marketed to growing numbers of discriminating customers through high-volume market outlets. The Farmers Markets, CSAs, and other direct market outlets will continue to evolve and will become increasingly important in many areas. Increasingly, however, the farmer-eater connection will be made through high-

volume market outlets, with the chef or market manager serving as the farmers' agent in forming and maintaining meaningful connections between farmers and eaters.

The next logical step will be to develop more complete local food systems, and then, networks of local food systems, connecting sustainable local food systems all across nations and around the world. Niman Ranch represents one approach to developing such a network. Niman works with more than 300 independent family farmers who produce beef, pork, and lamb under a strict production protocol. According to their website, “Niman Ranch produces the finest tasting meat in the world by adhering to strict code of husbandry principles: our livestock are humanely treated, feed the finest feed, never given growth-promoting hormones or antibiotics, and raised on land that is cared for as a sustainable resource” (<http://www.nimanranch.com/>). Niman Ranch provides meats for hundreds of high-end restaurants and food markets all across the country, many, if not all, of which are listed on their website.

Organic Valley is a farmers' cooperative that markets “high quality, strictly organic products to all fifty states and Japan, and to a variety of manufacturers looking for organic ingredients” (<http://www.organicvalley.coop/>). This 25-year old cooperative is made of more than 600 family farmers scattered all across the U.S. Their website states, “Our company's philosophy and decisions are based on the health and welfare of people, animals and the earth. In today's world, in order to make a difference, companies need to think different, reinvent the rules and create new paradigms.” Niman and Organic Valley are but two of many examples of organizations that are creating new paradigms for linking sustainable farmers with customers. Another, more generic example, is the concept of “Fair Trade,” currently popular for coffee and chocolate, which connects sustainable farmers in one part of the world with discriminating customers around the globe.

The next step would seem to be to link “local food systems,” rather than individual producers, with ecologically and socially conscious customers, to form a new sustainable global food network. The primary challenge in developing this new sustainable food system will be to maintain the integrity of the consumer-farmer-land connection. The most critical connection in sustainable food production is the connection of the eater with the earth – made “through” the farmer, chef, or food retailer. The earth is the ultimate source of all food and of all life, and thus, our relationships with the earth must be one of ecological integrity. To maintain ecological integrity, relationships among farmers, chefs, food retailers, and eaters must be relationships of personal and social integrity. Regardless of the means, the new food system must maintain its ecological, social, and economic integrity, if it is to equitably meet the needs of people over generations, and thus, be sustainable.

We don't need CAFOs to produce our meat, milk, and eggs and we don't need a corporately controlled global food system to feed the world. Instead, we need a global network of family farms, independent local food retailers, local restaurants that buy from local farmers, and discriminating food customers who are linked by their commitment to the principles of sustainability. The keys to the future of farmers, viable rural communities, and to good food for all people are all the same – a new global network of sustainable local food systems, linked by relationships of integrity.

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