

## **"Global Markets for Sustainably Produced Beef: Current Challenges and Future Opportunities."<sup>i</sup>**

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I am honored by this opportunity to present my perspectives of the global challenges and opportunities for sustainable beef production at the 10<sup>o</sup> SIMPÓSIO DA ASBRAM in Brazil. First, I must acknowledge that I am not an expert on global beef production and have very limited knowledge of Brazilian agriculture. Thus, I cannot speak as an authority on the specifics of sustainable beef production systems in Brazil. That being said, I can speak with some authority on issues related to sustainable animal agriculture in general. I believe the same basic *concepts* and *principles* of sustainability are essential for all types of agriculture in all parts of the world. My perspectives will focus on these basic concepts and principles rather than specific production methods or practices appropriate for sustainable beef production in Brazil.

I often refer to my professional opinions as “my truth.” My truth reflects what I believe to be true based on my education, independent research, and life experiences. Thus, my truth is a reflection of “my life story.” I grew up on a small farm in the United States of America (U.S.), and I have spent my entire professional career working with farmers and other residents of farming communities. My brother still lives on the home farm, and it is still small—at least by U.S. standards. After I left the farm, I was fortunate to be able to go to college and earned my BS, MS, and PhD degrees in agricultural economics. Between my undergraduate and graduate education, I worked for three years for Wilson & Co, the 4<sup>th</sup> largest meat packing company in the U.S. at the time. After receiving my PhD degree in 1970, I held faculty positions at North Carolina State University, Oklahoma State University, and the University of Georgia, before returning to the University of Missouri to finish my academic career.

During the first half of my 30 year academic career, I was a livestock marketing specialist. I did research related to livestock markets and helped livestock producers develop marketing strategies and make marketing decisions. Like other agricultural economists, I advocated and promoted an approach to livestock production that I now call “industrial animal agriculture.” While at Oklahoma State University, I worked with some of the largest beef feedlots in the U.S. at the time, which are now called concentrated animal feeding operations or CAFOs. We told farmers that farming had to change from being “a way of life” and to a “business.” We told livestock producers they should be prepared to either “get big”—to become more economically efficient—or get out” of farming.

I become Head of the Department of Extension Agricultural Economics at the University of Georgia in 1984, a time I still refer to as the U.S. “farm financial crisis.” At that time, many

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farmers in the U.S. were failing financially and losing their farms through loan foreclosures and bankruptcies. Many farmers had borrowed large amounts of money at record high interest rates during the 1970s. They had taken the advice of “agricultural experts,” who had predicted that global markets for agricultural commodities would continue expanding indefinitely, meaning profitability into the foreseeable future. However, an unexpected economic recession in the early 1980s reduced both domestic and global demand for agricultural commodities, prices fell dramatically, and many farmers were caught with debts that they simply were unable to pay off.

The people in my department were responsible for working with farmers who were under financial stress. We tried to help them save their farms, and if that wasn’t possible, to quit farming while they still had some equity—or least to not kill themselves. Over time, I concluded the farmers with the greatest financial problems were those who had followed the advice of the “agricultural experts.” They had “gotten big” rather than “getting out.” There was something fundamentally wrong with the economic approach to farming I had been taught and had been teaching farmers. The farmers who had “gotten big” were now being forced to “get out” of farming. In fact, it was inevitable. There was a limited amount of farmland left in the U.S. In order for some farms to become larger, others had to go out of business. I eventually was forced to conclude that the industrial approach to agricultural production not only wasn’t working but wasn’t going to work in the future.

Industrial agriculture certainly hadn’t benefitted the farmers who were going broke—or the rural economies and communities that had been established to meet the needs of farm families. Farm families not only supported local economies with their purchases of farm supplies and personal goods and services but also made it possible to have local schools, churches, and other social activities essential for a desirable quality of rural life. I eventually realized the industrialization of agriculture was also eroding the soil and polluting the air and water with toxic agricultural chemicals and biological waste. It was depleting the productivity of the land and other natural resources that would be needed to produce food for those of future generations. It was not sustainable.

I couldn’t continue promoting or even supporting this kind of agriculture. Fortunately, the concept of sustainable agriculture was already emerging in the U.S., in response to the problems of industrial agriculture. I was able to return to the University of Missouri in 1989 through a cooperative agreement with the U.S. Department of Agriculture (USDA) to provide state and national leadership for a new *Sustainable Agriculture Research and Education Program* (SARE). Sustainable agriculture is approach to farming that balances meeting the economic needs of farm families with maintaining the productivity of the land and being responsible members of communities. Sustainable farming is a way of life, not just a business.

I didn’t begin to fully understand the negative impacts of industrial *livestock* production until the mid-1990s. A large corporation, currently part of the CW Group of China, had gained permission from the state of Missouri to establish an 800,000 hog confinement feeding operation. I was contacted by one of my sustainable farmers and asked to review a study one of my colleagues in the Agricultural Economics Department had developed in support of the corporate proposal. The study attempted to justify the establishment of the corporate hog feeding operations, and CAFOs in general, as a logical rural economic development strategy. I reviewed

the report and used actual financial records of Missouri hog farmers to show the corporate hog operation would probably displace three independent hog farmers for every job they created in CAFOs. My report was not well received by my colleagues who had been promoting CAFOs.

Since that time, I have tried to keep up to date on the relevant research regarding the negative environmental, social, and rural economic impacts of CAFOs. Over the years, I have met with local groups confronted by the threats of CAFOs in 17 states of the U.S., 4 provinces of Canada, and in Wales of the U.K. Every situation is a bit different, but the basic environmental, social, and economic impacts of CAFOs are very similar. In the early days, there was a limited amount of “scientific” information available, which came mostly from universities promoting CAFOs. Today, however, more than 50 years of highly-credible research results and real world experience is available to verify early concerns and confirm the negative environmental, social, and economic impacts of industrial agriculture in general and CAFOs in particular. Wherever in the world CAFOs have replaced independent livestock producers, regardless of whether they are poultry, beef, hog, or dairy operations, the negative consequences have been basically the same.

So much information is now available documenting the negative ecological, social, and economic impacts of industrial agriculture that I think it is misleading to cite a few individual studies. I have started quoting meta-studies, which review dozens or hundreds of different studies to draw generalizable conclusions. For example, an extensive 2½-year study of “industrial farm animal production” was commissioned by the highly respected, nonpartisan Pew Charitable Trust. Their 2008 report cited more than 180 different references in concluding: “*The current industrial farm animal production (IFAP) system often poses unacceptable risks to public health, the environment and the welfare of the animals themselves.*”<sup>1</sup> They added: “*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.<sup>2</sup> Meanwhile the scientific evidence supporting the initial indictment continues to grow.

The research also confirms the negative social and economic impacts of CAFOs on rural communities. For example, a 2006 University of North Dakota meta-study reviewed 56 articles in peer-reviewed journals assessing the socio-economic impacts of industrial agriculture on rural communities. It concluded: “*Based on the evidence generated by social science research, we conclude that public concern about the detrimental community impacts of industrialized farming is warranted. In brief, this conclusion rests on five decades of government and academic concern with this topic, a concern that has not abated but that has grown more intense in recent years, as the social and environmental problems associated with large animal confinement operations have become widely recognized. And it rests on the new round of risks posed by industrialized farming to Heartland agriculture, communities, the environment, and regional development as a whole.*”<sup>3</sup> It’s now clear and quite certain that CAFOs are not a logical strategy for rural economic development.

U.S. Department of Agriculture statistics also confirm that CAFOs destroyed economic opportunities for family farmers and independent livestock producers. In 1960, farmers were still more than *eight percent* of the U.S. workforce. Today, farmers make up less than *one*

percent.<sup>4</sup> 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%.<sup>5</sup> Many of the remaining beef operations are small breeding herds, where producers give quality of life priority over production and profits. The numbers of livestock and poultry producers continue to decline as the size of industrial farming operations continue to grow.

The challenge of industrial agriculture to independent producers is not limited to the U.S. Transnational agribusiness corporations—such as Tyson Foods in the U.S., WH Group in China, and JBS Foods in Brazil—are spreading the industrial model of livestock and poultry production around the world. Most major international economic organizations, including the International Monetary Fund and the World Bank, are promoting industrial agriculture as an essential means of providing global food security for the future. The agribusiness corporations and industrial agricultural nations, including the U.S., are pressuring the Food and Agricultural Organization of the United Nations (FAO-UN) to support industrial agriculture. The FAO has tried to remain neutral, in response to offsetting pressures from organizations, such as La Via Campesino, that support agroecology, and other sustainable agricultural alternatives.

I believe experiences with industrial livestock production in the U.S. are particularly relevant to Brazil because the “intensification” of Brazilian beef production is being promoted by politically powerful international institutions. For example, in a 2014 report, *Beefing up in Brazil*, Rabobank projected that “Brazilian feedlot capacity will double in the coming decade.”<sup>6</sup> The report began, “*The world needs more beef, and Brazil is set to provide this beef by stepping up rapid intensification of its production sector over the next ten years... The growth will necessitate up to USD \$500 million in new infrastructure investments in feedlots alone.*” In a 2017 report, *Upping the Stakes*, Rabobank seemed to be giving some recognition to the Brazilian tradition of producing beef on grass or in grazing systems rather than feedlots.

The report began, “*Brazil is expected to increase its beef production by around 2% per year over the coming decade. This will be supported by an increased use of systems that rely on pastures in combination with grains in order to accelerate growth and reduce time to market. These emerging systems, along with the traditional feedlot, are the key to improving productivity and mitigating risks, and are likely to be present in 45% of Brazil’s beef production by 2026, whereas today less than 30% of total beef production in Brazil uses these systems.*” The key question for Brazil’s sustainable beef producers is whether they should take the first step toward industrial animal production, through “intensification” of pasture-based production systems. If they take this first step, how will they protect themselves from corporate *industrialization*—and the inevitable loss of sustainability?

Numerous global studies confirm that problems of industrial agriculture are not limited to U.S. or the so-called developed economies. An International Panel of Experts in Sustainability (IPES) described the evidence condemning industrial agriculture as “overwhelming” in a report published by the FAO in 2016.<sup>7</sup> They cited more than 350 studies documenting the failures of industrial agriculture and calling for fundamental change. These studies documented that: “*Today’s [industrial] 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.”<sup>8</sup>*

The specific challenges posed by intensification of animal agriculture has focused on negative environmental impacts of livestock in general and beef production in particular. The FAO-UN 2006 report, *Livestock’s Long Shadow; Environmental Issues and Options*,<sup>9</sup> concluded: *“Livestock are one of the most significant contributors to today’s most serious environmental problems. Urgent action is required to remedy the situation.”* When emissions from land use and land use change are included, the livestock sector accounts for 9 percent of CO<sub>2</sub> deriving from human-related activities, but produces a much larger share of even more harmful greenhouse gases. It generates 65 percent of human-related nitrous oxide, which has 296 times the Global Warming Potential (GWP) of CO<sub>2</sub>. Most of this comes from manure. And it accounts for respectively 37 percent of all human-induced methane (23 times as warming as CO<sub>2</sub>), which is largely produced by the digestive system of ruminants, and 64 percent of ammonia, which contributes significantly to acid rain.”<sup>10</sup>

The FAO report also documents the wide-scale degradation of land and other natural resources by animal agriculture. *“The livestock business is among the most damaging sectors to the earth’s increasingly scarce water resources, contributing among other things to water pollution, eutrophication, and the degeneration of coral reefs. The major polluting agents are animal wastes, antibiotics and hormones, chemicals from tanneries, fertilizers and the pesticides used to spray feed crops. Widespread overgrazing disturbs water cycles, reducing replenishment of above and below ground water resources.”* Significant amounts of water are also being withdrawn for the production of feed for livestock operations. About 20 percent of the world’s pastures were considered to be degraded through overgrazing and compaction and in many cases are advancing toward desertification.

Highly respected international organizations have also identified industrial animal agriculture as a threat to public health. For example, 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.”<sup>11</sup>* 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.”<sup>12</sup>* The Director-General of the FAO 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.”* Some countries have already moved to restrict or eliminate the routine use of antibiotics in CAFOs, which if enforced, would threaten the future of industrial animal agriculture.

Animal welfare concerns have garnered much of the negative publicity regarding CAFOs in the U.S. and is an even more important public issue among Europeans. A Canadian study sponsored by the World Society for the Protection of Animals cites numerous studies

documenting the inhumane treatment of animals in CAFOs: *“In the 20th century, intensive agriculture (ILOs i.e. CAFOs), broke the ancient rule that militated in favour of good welfare for farm animals. No longer was it necessary to respect animal nature... Modern agriculture put animals into environments for which they were ill-suited, yet still assure production and profitability. Modern intensive production practices were first criticized on animal welfare grounds in the 1960s. Research in the subsequent 50 years has shown that these criticisms were well-founded.*<sup>13</sup> Even if animals are not tortured, they are inevitably deprived of the opportunity to express their innate animal behaviors, resulting in unavoidable stresses. The concepts of “concentrated confinement” and “humane treatment” are simply incompatible.

As public concerns continue to grow, I believe industrial animal agriculture ultimately be rejected by American and global society. This conclusion is based on the 50 years of highly credible research information and more than 20 years of personal experiences. The ecological, social, and economic challenges confronting industrial agriculture simply cannot be met without abandoning the industrial system of agricultural production. I think we are in the early stages of *transformational* change in global agriculture today—particularly in global animal agriculture. Such times of great change present many challenges for current agricultural producers, but also presents producers with many opportunities for those who respond to the challenges. Decisions made at such points in time can fundamentally change the future, for either better or worse.

The opportunities to create a new and better system of agricultural production for the future are already apparent for those who are willing to consider the possibility. The FAO-IPES report concluded: *“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.”*<sup>14</sup> Industrial agriculture ultimately must be replaced with a fundamentally different kind of agriculture: A sustainable agriculture.

The three basic principles of sustainable agricultural production are ecological integrity, social responsibility, and economic viability. Everything of use to humans, including everything of economic value, ultimately comes from the earth by way of society. Sustainable farms then must be “multifunctional:” they must be managed in ways that conserve and protect the land and natural resources, their ultimate source of productivity; they must support and be supported by their communities and society, their source of economic viability, and they must be provide a desirable quality of life, economically and socially, for farmers and their families.

A landmark International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD) report, *Agriculture at a Crossroads*,<sup>15</sup> reflected a consensus of 400 scientists from 58 different countries. The 2009 report observed that all agriculture is inherently multifunctional: *“It provides food, feed, fiber, fuel and other goods. It also has a major influence on other essential ecosystem services such as water supply and carbon sequestration or release. Agriculture plays an important social role, providing employment and a way of life. Both*

*agriculture and its products are a medium of cultural transmission and cultural practices worldwide. Agriculturally based communities provide a foundation for local economies and are an important means for countries to secure their territories.*"<sup>16</sup> The fundamental question is whether these multiple functions of farms have positive or negative ecological, social, economic consequences for global society and the future of humanity.

Decades of research and actual experience has verified the only significant positive function of industrial animal agriculture in to enhance the economic returns of investors in the global food corporations. The goal of increasing Brazil's economic competitiveness in global markets was the only benefit suggested by the Rabobank reports advocating "intensification" of Brazilian beef production. Once any system of agricultural production becomes motivated or driven solely by the economic bottom-line, it ceases to be multifunctional and inevitably tends toward industrialization and diminished sustainability. Sustainable beef production must be ecological sound and socially responsible in order to be economically viable; it must be multifunctional.

Contrary to the claims of its advocates, the world doesn't need industrial agriculture to meet the food needs of a growing global population. In fact, industrial agriculture hasn't even provided food security in U.S. In 2015, the USDA classified nearly 13% of U.S. households as "food insecure," and nearly 17%, or one-of-six, of American children lived in food insecure households.<sup>17</sup> Most people are hungry because they are poor, and cheap food cannot solve the problem of persistent poverty. In addition, the industrial food system has been a major contributor to an epidemic of diet related health issues, such as obesity, diabetes, heart disease, high blood pressure and various cancers. A 2010 global public health report of 500 scientists from 50 countries concluded that obesity is now a greater problem than hunger. "*The so-called 'Western lifestyle' is being adapted all around the world, and the impacts are all the same.*"<sup>18</sup>

Sustainable systems of agricultural production, however, provide opportunities to succeed where industrial agriculture has failed. Contrary to popular beliefs, the food needs of 70% to 80% of the people of the world still are still being met by small family farms, most of which Americans would call "subsistence farms."<sup>19</sup> Again, global research has shown that with minimal public assistance, not industrial technologies, the world's small family farmers would be quite capable of not only feeding themselves but also of "feeding the world." *Agroecology, permaculture, biodynamic farming, nature farming, and holistic management* are some of the alternatives capable of achieving and sustaining global food security without corporate/industrial agriculture. Popular farming alternatives to industrial agriculture in the U.S. include *organic, ecological, regenerative, holistic, biodynamic, and traditional* family farming. These alternative farmers still produce something less than 10% of America's food, but they represent the fastest growing sector in the American food system.

I believe hundreds of millions of consumers, not only in the U.S. but around the world, are willing to pay premium prices for sustainably produced beef. Brazil's sustainable beef producers need not compete with industrial beef producers in a contest to produce the *cheapest* beef in the world. Instead, they can prosper by producing the *best* beef in the world. I believe governments around the world are awakening to the false promises and inevitable negative consequences of agricultural industrialization. Global agribusiness corporations are now facing increasing global resistance to adoption of their industrial agricultural technologies and methods of production.

The environmental challenges that industrial agriculture cannot meet create opportunities for sustainable livestock producers—particularly sustainable beef producers. Industrialization is a linear system in that it not only produces useful products but inevitably generates wastes that pollute the environment and depletes natural resources. The productivity of industrial agriculture depends on continuous extractions of nonrenewable fossil energy, groundwater, and minerals. Industrial agriculture lacks the capacity for waste assimilation or resource regeneration without losing its economic advantage over sustainable systems of production. 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 conserving non-renewable resources and maintaining the resilience and regenerative capacity of soils, aquifers, and healthy living agroecosystems.

Sustainable beef producers are harvesters of solar energy in that they rely primarily on the solar energy captured by grasses and forages to provide animal nutrition. These green plants remove carbon dioxide from the air and are capable of sequestering enough carbon in the soil to more than offset their CO<sub>2</sub> emissions. Grasses and forages that are high in protein and overall nutrition can reduce emissions of methane by ruminant animals. Grass and forage based beef production results in far less of the most powerful climate-changing emission, nitrous oxide, than CAFOs. Sustainable, pasture-based beef production can restore the natural productivity of depleted soils, restoring their water infiltration and holding capacity, and over time, restore water cycles and replenish groundwater aquifers. Holistic management, based on intensively managed planned grazing systems, is one of the most promising approaches to increasing productivity and profitability of livestock production without compromising ecological and social integrity.<sup>20</sup>

Growing public concerns regarding the public health threats posed by CAFOs provides additional opportunities for sustainable beef producers. Animals raised on pastures and under conditions that allow space for natural animal behavior do not need to rely on routine use of antibiotics to prevent bacterial infections or other diseases. The animal welfare and antibiotic resistance challenges of CAFOs are not relevant for grass/forage based livestock systems. In addition, the health benefits associated with eating beef and dairy products from animals raised on grass, rather than in CAFOs, have been widely documented in scientific reports.<sup>21</sup>

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. Omega-3 fatty acids, or CLSs, play an important role in protecting heart health, preventing stroke, reducing inflammation, and lowering blood pressure.<sup>22</sup> While Omega-6 fatty acids are also necessary, studies show that consuming too much Omega-6s increases the risk of diabetes, cardio-vascular diseases, cancer, and contributes to the obesity epidemic.<sup>23, 24</sup> It is important that Omega -3 and Omega-6s be consumed in an appropriate balance to maintain good health. Beef and dairy products from animals produced in CAFOs contain more harmful Omega-6 and less Omega-3 due to the high-energy grain rations fed for maximum rate of gain in intensive confinement operations. Beef and dairy products from grass/forage based systems can restore a healthy balance of Omega-3 and Omega-6.

Markets for antibiotic-free and grass-fed meats and dairy products in the U.S. have been growing much more rapidly than for other animal products.<sup>25</sup> Informed, discerning consumers are providing economic opportunities for those producing animal products that are pasture-based,



grass-finished, free-range, humanely-raised, hormone free, and others alternatives to products produced in CAFOs. I believe markets for non-industrial animal food products will emerge quicker and grow much faster in the future than in the past. More highly-credible information regarding the negative impacts of industrial animal agriculture is available today than in the past. More information is also available regarding the positive environmental, public health, animal welfare, and diet/health benefits of sustainable agricultural systems.

Multinational agricultural corporations almost certainly will continue to promote the intensification and industrialization of beef production in Brazil. They will likely be supported by the international financial and “economic development” organizations. The Brazilian government will be pressured to enact public policies that support agricultural intensification and industrialization not only to increase exports but also as a means of protecting nature preserves and other environmentally fragile areas. However, industrial systems of animal production will encounter the same environmental problems in Brazil as in the rest of the world. There is no way to isolate nature from agriculture. “Dead zones” in oceans and bays surrounding the U.S. are thousands of miles from their agricultural sources. The only solution is to find ways to farm in harmony with nature wherever sustainable farming is possible and to not farm elsewhere. Industrial agriculture is not sustainable “anywhere.”

As industrial agriculture makes inroads into Brazil, the domestic market for sustainable animal products will grow. In addition, Brazil likely has a comparative advantage in sustainable beef production over producers in the U.S., Europe, and other parts of the world where public rejection of industrial agriculture is growing. Export of “high-valued” primal cuts of meats to more affluent consumers could enhance opportunities to provide other equally-nutritious and healthful animal products to less affluent domestic consumers. Meeting the basic food needs of all in the present, as well as the future, must remain a priority for sustainable beef producers. A commitment to domestic food security could be important in gaining popular and political support for sustainable agriculture. It is simply not reasonable to expect people to support agricultural exports of food products to other countries, or protection of potentially productive natural resources for the future, while their own children are hungry or malnourished.

The primary challenge of sustainable beef producers in Brazil, as well as the U.S., is to find “reasonably efficient” means of connecting with the millions of consumers who share their values and providing them with high-quality, healthful, and nutritious products. The high retail price premiums for organic and other sustainably produced food products in the U.S. today are due far more to higher costs of processing, packaging, transportation, and retailing than to higher producer-level costs of production. Large corporations control the U.S. food system, from farmer to consumer, and they treat non-industrial foods as niche market opportunities to increase corporate profits.

Corporate control of food processing, distribution, and retailing virtually ensures the continuation of diet/health problems for consumers, pollution of the environment, degradation of natural resources, and economic decay of rural economies. Sustainable producers who rely on the corporate industrial food system to access consumers will be under continual pressure to compromise their ecological and social integrity in order to remain economically competitive.

This means that sustainable beef producers ultimately must find ways to bypass the current corporately controlled system of food processing, distribution, and retailing.

The new sustainable global food system I envision for the future would be built upon a foundation of ecological and social integrity, sustained by personal relationships of trust rather than impersonal markets. These relationships of trust would begin *within* local communities where people know each other personally and share common values and a common future. Thus, the first condition for a sustainable animal agriculture would be to help meet the basic food needs of people in their local communities. These community-based networks would include a commitment to ensuring that everyone in the community has access to enough “good food” to support healthy, active lifestyles. Personal relationships of trust *among* community network facilitators would ensure that foods that could not be produced locally were made available locally from producers in other local food networks that share the same common values and commitments to quality, integrity, and sustainability.

Local community networks would expand into regional and national networks, ensuring enough good food for those who share a common commitment to ecological and social integrity. Sustainable national food networks could expand into global food networks, with the integrity of import and export transactions ensured through a personal sense of connectedness between the producers in one country and the consumers in another. These networks would be sustained by shared social and ethical values, rather than impersonal economic values. In essence, a new sustainable global food system would be sustained through shared social and ethical values and a common commitment to sustainability. The new food system would function in parallel with the industrial food system during the period of transformation.

Finally, people often ask me if I am optimistic about creating a new sustainable food system for the future. My standard response is that “I am hopeful, if not optimistic.” I am hopeful because I know it is possible. I have had opportunities to meet with farmers and livestock producers all across North America and in other parts of the world who are already creating this new system. I don’t underestimate the obstacles or difficulties, but I have seen a lot of progress in the past 30 years. Most important, I believe people are beginning to understand the importance of the personal relationships that are essential in creating local food systems.

People are awakening to the fact that we are not only material beings but also social and moral beings. We need the personal relationships we find in caring communities for reasons that have nothing to do with any economic value we may receive in return. We also need a sense of purpose and meaning in life. We need to care for the earth as well as each other—because what we eat and how we produce our food is important—it matters. Sustainable agriculture, including sustainable beef production, is not just about growing food to fuel the human body, it’s also about creating caring communities to feed the human spirit and soul. In this kind of social and spiritual awakening, there is always hope.

## End Notes

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- <sup>1</sup> 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](http://www.pewtrusts.org/news_room_detail.aspx?id=38438) , full report, <http://www.ncifap.org/> .
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