

Small Farms: Their Role in Our Farming Future

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We are at that very point in time when a 400-year-old age is dying and another is struggling to be born – a shifting of culture, science, society, and institutions enormously greater than the world has ever experienced. Ahead, the possibilities of the regeneration of individuality, liberty, community, and ethics such as the world has never known, and a harmony with nature, with one another, and with the divine intelligence such as the world has never dreamed. (Dee Hock, founder of VISA)

Will Farming be a Part of Our Future?

As I recall the creed of the Future Farmers of America begins with the words "I believe in the future of farming with a faith born not of words but of deeds." For years I believed that creed and have spent much of my life trying to live by that creed, but I simply can no longer believe it is true. There is no future of farming – at least not of farming as we have known it – not if the dominant trends of today continue into the future. Every time the average farm size goes up, the number of farmers goes down. Every time a farmer signs a corporate production contract, an independent farmer becomes a "corporate hired-hand."

The food and fiber industry most certainly has a future, people will always need food, clothing, and shelter, and someone will provide them. But there will be no future for farming -- not unless we have the courage to challenge and disprove the conventional wisdom that farmers must either get bigger or get out.

A continuing trend toward fewer and larger farms is evident in the 1997 Census of Agriculture. The total number of farms was reported down less than 1 percent from 1992. However, farmers who consider farming their principal occupation dropped nearly 9 percent from 1992 — an even larger fall than between 1987 and 1992. Politicians who were afraid of losing federal funds because of lower farm numbers got the census definition of farms changed. For example, a "farmer" in 1997 included people living in town whose only farm income was a CRP payment and or had as few as 5 horses stabled somewhere on a farm. The result was a 17 percent increase in farms with less than \$10,000 in annual sales. Farms reporting \$1 million or more in sales increasing by more than 63% in the five-year period. In general, farms with more than \$250,000 and less than \$10,000 in annual sales increased in numbers, but farms of all other sizes in between continued to decline. Thus, the trend toward fewer, larger farms continues.

This trend toward larger farms is driven by the industrialization of agriculture. The tools of industrialization are specialization, simplification, mechanization, and standardization. A fundamental principle of industrialization is centralization of command and control.

Industrialization allows fewer farmers to control more land and labor by using more capital – more machinery and equipment and more commercial inputs. So, industrial farms are larger than their traditional counterparts.

Consumer demand for food grows at a "snails pace" in comparison with overall growth in the economy. Thus, as farms get larger there are inherently fewer opportunities for farmers. As some farms get larger, other farmers are forced to either leave the farm or become someone else's "hired hand." As farms grow larger and fewer, the future of farming grows ever dimmer.

That farming has no future is not a popular view among those in the agricultural establishment. Conventional farming publications are filled with visions of a new high-tech future for farming. Technology is seen as the key. Bio-technology, genetically modified organisms of all sorts; precision farming, farming by computer-driven robots guided by global positioning systems -- these are hailed as the keys to the future of farming. In a sense, the agricultural establishment is right. Bio-tech and Info-tech are the keys to the future of farming – specifically to the end of the future of farming.

Agriculturists brag that precision farming will allow a farmer to plan and program everything so that each crop in each section of a field gets precisely what it needs to grow at all times. The "work" of farming can be done by a "tractor driver" -- allowing the farmer to spend his or her time at a computer analyzing data and working out a better plan. Crop production of the future will work a lot like the "animal factories" of today. The work will be done by "hired hands."

Agriculturists brag that bio-technology will allow the most desired genetic traits -- for both production and consumption -- to be designed into the genetic code of crops and livestock. With new designer genes, plants and animals will protect themselves from pests and disease and will grow at optimum rates to an optimum quality with a minimum of commercial inputs. The farmer need only plant the seed and wait for the crop to grow to harvest. Those farming with precision-farming robots won't even have to plant and harvest.

But, if precision farming can be done from the farmer's office, it can just easily be done from someone's corporate headquarters. The computer operates from a data bank linked with a satellite. It doesn't need to see either the land or the crop. Genetic engineering most certainly will take place in a corporate laboratory somewhere – possibly on a university campus. The "gene jockeys" don't need to see the crop or livestock, they just manipulate their genes. In the world of high-tech farming, the thinking part of farming will no longer take place on the farm. So what's the farmer going to do?

High-tech production may produce lots of food and fiber, at least for a while. But, there will be no place for the farmer – the worker who also thinks, and the thinker who also works. One fundamental rule of life is that those who expect rewards must do something to deserve them. Sure, some people may do well for a while without doing

anything, and a few people get by without doing much for much of their lives. But, most of us know that we have to do something productive if we expect to be rewarded. It's just common sense. If farmers of the future only sit and watch, they better not count on making many profits. The folks who program the computers and manipulate the genes – not the farmers -- will be the ones who are doing something creative, and they -- not the farmers -- will reap the profits for their efforts.

With genetics and marketing controlled by the large multi-national corporations, the "farmer" also may become corporately controlled. Some farmers are counting on contracting as a means of staying in business in the high-tech future. But they should realize that when they sign a comprehensive production contract, they have given up the right to make important decisions on their farm. Someone else will be calling the shots; deciding how much they get to produce, when to plant or place animals on feed, what to feed, how to control pests, when to harvest, and where to deliver. It no longer matters what the producer thinks is best. The fact that farmers may provide buildings, equipment, or land does not empower them, but instead enslaves them – particularly if they need contract payments to pay off loans. They are no longer a farmer, but have become a corporate "hired hand." There is nothing wrong with being a hired farm worker – it's an honorable occupation. But, it's just not farming. If contract farming were the only alternative, there would still be no future in farming.

Is Organic Farming Sustainable?

Many farmers are seeking alternatives to industrialization, high-tech quick fixes, and corporate contracting. They are searching for a way of farming that has a future. The recent rapid growth in organic markets – reportedly 25 percent per year over the past several years -- makes organic farming a prime candidate for consideration. Growing organic markets and organic price premiums also have attracted attention from the giant corporations. The Hudson Institute's Dennis Avery and a few other high-input junkies not withstanding, organic production has gained in both interest and credibility. The "o-word" -- a curse word in the agricultural establishment a few years ago --has become almost an "in-word."

Unfortunately, the "S-word" remains a curse word in the vocabulary of most folks in the agricultural establishment – including many university people. Sustainability is OK if it means a profitably, environmentally sound agriculture. Even Monsanto and DuPont have their "sustainable agriculture" programs. But, once you start bringing in the social issues – family farms, rural communities, quality of life, ethics and values – the establishment abandons sustainability. They have grudgingly accepted the fact that an agriculture that uses up its resource base and pollutes its environment is not sustainable. But, they claim industrial systems can be environmentally friendly. They balk at accepting the social dimension of sustainability, because any claims of being socially responsible they make quite simply are not credible. They want to sustain agriculture, and their own profitability, but feel no responsibility to sustain people through agriculture. They reject the mandate for a socially responsible agriculture, because industrial systems are simply not socially responsible.

Up to this point in time, organic farming and sustainable agriculture have generally traveled the road of enlightenment and progress together. Organic farming is as old as agriculture. But, history indicates that organic – in and of itself – does not ensure sustainability. Civilizations have risen from fertile lands only to fall when the nutrients were depleted or crops destroyed by pest -- under farming systems that were organic by necessity. Thus, organic systems are not inherently sustainable. However, many still believe that ultimately all sustainable systems must be organic, even if all organic systems are not sustainable.

The sustainable agriculture movement evolved out of the organic community a decade or so ago. The evolution was an attempt to widen the circle of people involved in the search for systems of farming that will last, and thus, will be sustainable over time. The early organic advocates of sustainable agriculture probably still believe that all sustainable systems will be organic, but they have been willing to accept those taking alternative means in hopes of reaching a common end.

Advocates of organic and sustainable have generally agreed on purpose and principles, even if not always on means or methods. The generally accepted purpose of sustainable agriculture is to meet the needs of the those of the present while leaving equal or better opportunities for those of the future – to apply the Golden Rule across all generations. General agreement also exists concerning the principles of sustainability. Most agree that sustainable systems must be ecologically sound, economically viable, and socially responsible – that all are necessary, and none alone or in any pair is sufficient. Up to this point, organic and sustainable have been held together by purpose and principles, but their continuing in harmony may be in jeopardy.

Many of the new organic farmers, or would-be organic farmers, see organic mostly, if not purely, as a matter of economics. Some conventional farmers have land coming out of the Conservation Reserve Program (CRP). Much of this land has not had pesticides or inorganic fertilizer applied to it in more than three years, and thus, could qualify quite easily for organic farming. Other conventional farmers are going broke producing basic commodities and are looking for any profitable alternative. Large-scale, corporate farming operations see organic as a growth market to be exploited for as long as it lasts. Organic standards debates over use of biotechnology, sewage sludge, and irradiation were all reflections of conventional and industrial interests in organic farming. Thus, many conventional farmers and corporations alike may be looking at the organic production as an immediate, short-run economic opportunity. They may not see organic as a means to the end of a more sustainable agriculture.

Even the traditional "organic community" is no longer of one mind. Most agree that they want to protect their markets from industrialization. But they don't necessarily agree on whether organic markets should remain niche markets or become mass markets. If organic markets become mass markets, they eventually will become industrialized markets. And industrial production is inherently unsustainable – regardless of the inputs and practices approved or used. The materials and methods may be organic but the paradigm for production will be industrial. Allowable materials and methods will be

changed over time, if necessary, to accommodate the industrial paradigm. It makes little difference whether "industrial organic" systems emerge as existing organic producers become corporate giants or as current corporate giants capture the market. Neither will be sustainable.

Some see wisdom in keeping organic markets as niche markets -- preventing their industrialization -- but still see no particular relevance in linking niche markets with ecological niches for production. Organic farming, to them, is defined by a set of rules they must follow to exploit various niches of eco-conscious consumers. Niche markets to them represents opportunities to sustain profitability by offering something unique -- something that can't be mass-produced and for which there are no close substitutes. As long as they maintain their uniqueness, they can sustain their profits.

But, can they sustain production? For production to be sustainable, the system must be ecologically sound as well as profitable and socially responsible. The process of production must be compatible with the ecology of the place of production. Niche markets will be sustainable only if the means of production are tailored to conform to their ecological niches. Those who violate the ecological principles of sustainability will not be able to sustain their uniqueness, and ultimately will not be able to sustain profitability. Examples abound of highly successful enterprises, serving niche markets by means compatible with their places, failing miserably when they attempted to expand outside of their niches. Some expanded beyond their market niches, but others failed because they moved outside of their unique ecological places of production.

Those organic farmers who continue to pursue organic farming as a means for sustainability will continue to travel the road of enlightenment and human progress. They will help build an agriculture that is ecologically sound and socially responsible, as well as economically viable. Those who exploit current economic opportunities for short run self interest will travel a different road to the future -- a road that most certainly dead-ends beyond some near or distant curve.

National organic standards will almost certainly put a substantial portion of organic production on that dead-end road to the future. National standardization will allow those who can meet the minimum standards at the lowest "dollar and cent cost" to prevail -- which almost certainly will be the industrial, mass producers. Of those outcomes of the certification debate still in doubt, the most critical is that state and non-government entities be allowed to maintain their own certification programs, and that individuals be allowed to truthfully label whatever they offer for sale. Without those rights, all organic markets will become industrial, mass-markets. But, even the maintenance of organic niche markets does not ensure the sustainability of organic production. Those who are driven mostly, or solely, by the promise of profits from niche markets -- ignoring their ecological niches or places of production -- also will threaten its sustainability.

Are Small Farms More Sustainable?

How big are the ecological niches? How large, or small, must a farm be to be sustainable? The National Commission on Small Farms stated as one of their major policy goals that USDA "Emphasize Sustainable Agriculture as a Profitable, Ecologically and Socially Sound Strategy for Small Farms." A farmer testifying before the committee said "Small family farms have kept our water pure, our environment clean, for over a hundred years. Factory livestock farming and corporate farming could end all of that." The committee report proclaimed that sustainable agriculture held promise for small farms, but didn't address directly the question of whether small farms held promise for agricultural sustainability.

Are smaller farms more sustainable? Sustainability is a product of balance, or harmony, among the ecological, economic, and social dimensions of a farming system. A smaller farm lacking this harmony is less likely to be sustainable than a larger farm that is more in harmony. But there are logical reasons to believe that balance and harmony will be easier to achieve on smaller farms rather than large farms – other things similar if not equal.

Nature is inherently diverse. Geographic regions are different, watersheds are different, farms are different, and fields are even different -- both among and within. Industrial agriculture treats fields, farms, watersheds and even regions as if they were all pretty much the same. Certainly, industrial systems are fine-tuned a bit here and there to make production practices of one region fit another. Each state has a bit different set of best management practices, and some further adjustments are made from farm to farm and field to field. But, the fundamental systems of conventional production are all pretty much the same.

The same breeds and varieties, fertilizers and feeds, pesticides and antibiotics, machinery and equipment, and business and marketing strategies are used across fields, farms, and watersheds, in all regions of the country. The goal of research is to find universal solutions to common problems -- to find ways to twist, bend, and force nature to conform to some universal production and distribution process. Industrial, large-scale mass production requires uniformity.

But nature is diverse. Large-scale production creates inherent conflicts with this diverse nature – and inherent threatens sustainability. Farms that conform to their ecological niches avoid such conflicts. Some ecological niches may be large, but most are quite small. Current concerns for agricultural sustainability are based on strong and growing evidence that most farms have already outgrown their ecological niches and could be more sustainable if they were smaller.

Sustainable farms must also be of a size consistent with their markets. Conventional wisdom is that most markets are mass markets, and thus, farms must be large – or if not must market collectively. The conventional wisdom is wrong. Markets are made up of individual consumers, and as consumers – as people – we are all different. We don't all want the same things. In fact, each of us actually prefers something just a little bit different, and thus, values the same things a bit differently. Mass markets are created

by lumping together a lot of people who are willing to accept the same basic thing – even though they might not prefer them. If mass markets can be created, the food system can be industrialized, and dollar and cent food costs will be lower. The lower price is a bribe to consumers to accept something other than what they actually would prefer. Typically, they must be coerced as well as bribed to accept what the industrial system has to offer. That's why Americans spend more for advertising and packing of food than they pay the farmer to produce it. It costs more to convince people to buy industrial food products than it does to produce them.

Eighty cents of each dollar spent for food goes for processing, transportation, packaging, advertising and other marketing services. One key to economic sustainability of small farms is to capture a larger share of the consumers' food dollar by performing some, and bypassing others, of these marketing services. Farmers currently get only about ten cents of each food dollar as a return for what they contribute to production, the other ten cents goes for purchased inputs. By tailoring production to consumer niche markets, and selling more directly to consumers, small farmers have an opportunity to make more profits without becoming big farmers.

The conventional wisdom is that niche-marketing opportunities are limited and can support only a handful of farmers. Once again, the conventional wisdom is wrong. Since all people want something slightly different, the ultimate in niche marketing would be to give every individual precisely what they want. All consumer markets are made up of individuals – totally, not just in part. Thus, all markets in total are made up of niche markets. The question is not how many niches exist, but instead how many different niches does it make sense to serve? The relevant answer, at least at present, is that more than enough market niches exist to support as many small farmers as might choose to direct-market to consumers. A lack of niche markets need not place a lower limit on the size of farms. Farms can be as many and as small as needed to accommodate the niches of nature.

The most compelling argument in support of sustainable farms being smaller is that sustainable farms must be more "intensively" managed. Wendell Berry puts it most succinctly in his book, What are People For, "...if agriculture is to remain productive, it must preserve the land and the fertility and ecological health of the land; the land, that is, must be used well. A further requirement, therefore, is that if the land is to be used well, the people who use it must know it well, must be highly motivated to use it well, must know how to use it well, must have time to use it well, and must be able to afford to use it well (p. 147)." Intensive management is possible only if farmers have an intensive relationship with the land – if they know it, care about it, know how to care for it, take time to care for it, and can afford to care for it – only if they love it.

Industrial agriculture degrades and destroys the relationship between the farmer and the land. Industrialization is management "extensive." Specialization, simplification, standardization, and mechanization allow each farmer to cover more land, supervise more workers, and handle more dollars. Industrial management is "extensive" in that each manager is able to manage more resources. Extensive management makes it

possible for each farmer to make more profits in total, even if profits per unit of production are less. But, as the attention of each farmer is spread over more land, more laborers, and more capital, each acre of land, each worker, and each dollar receives less personal attention. The relationship of the farmer with the land, and with the people of the land, is weakened. If the large farmer no longer knows the land, no longer cares about it, forgets how to care for it, doesn't have time to care for it, or can't afford to care about, how well will the land be used? How can it remain productive? How can a large farm be sustainable?

A small farm can be managed "intensively." Intensive management allows a farmer to manage less land, using less labor, while handling fewer dollars. By managing fewer resources more intensively, the farmer is able to make more profit per unit of output, and thus, make more total profits – even if total production or output is less. As the farmer has more time and attention to give to each acre of land, each worker, and each dollar, the farmer's relationship to the land and the people of the land is strengthened. The small farmer has an opportunity to know the land, to care about it, to learn how to care for it, has time to care for it, and can afford to care about. The land on a small farm can be used well and can remain productive. A small farm can be sustainable.

The fundamental purpose of farming is to harvest solar energy – to transform sunlight into food and fiber for human use. It might seem that even God favors the larger farmer because a large farm covers more space, thus, catching more sunshine and rain. But, God also has given us a choice of making either wise or foolish use of the gifts of nature with which we are entrusted. Our industrial agriculture currently uses more energy from fossil fuels than it captures in solar energy from the sun. This can hardly be deemed wise and efficient use. But as a consequence, a small farmer can be more economically, socially, and ecologically viable than a large farm, simply by being a more effective harvester of the solar energy. In essence, a more intensive manager is a better harvester of the sun.

Some ecosystems and farming systems are easier to manage effectively than are others, and thus, require less attention per unit of resources to manage sustainably. Those requiring less intensive management can be larger without sacrificing sustainability. For example a sustainable wheat/forage/cattle farm may be far larger than a sustainable vegetable/berry/poultry farm. But the sustainable wheat/forage/cattle farm is likely to be far smaller than the typical specialized wheat farm, forage farm, or cattle ranch. And the sustainable vegetable/berry/poultry farm is likely to be far smaller than the typical specialized vegetable farm, berry farm, or poultry operation.

Sustainable farms need not be small in terms of acres farmed or total production, but they will need to be managed intensively. And intensively managed farms will be smaller than will otherwise similar farms that are managed extensively. Neither land nor people can be sustained unless they are given the attention, care, and affection they need to survive, thrive, and prosper. That attention, care, and affection can be more easily given on a smaller than larger farm.

Are Small Farmers Real Farmers?

Small farms may be more sustainable, but are small farmers really farmers?

Conventional wisdom is that small farmers are not "real" farmers – they are part-timers, sundowners, hobby-farmers, and such. Among Webster's definitions of the word "real" are found authentic, permanent, practical, and independent. And in these terms, it can easily be argued that small farmers may be the only real farmers.

Real farmers care about people – their families and communities – not just production and profits. Real farmers care about the land – the things of nature. They realize that farming somehow is a sacred trust – to take only what they need and leave as many and as good opportunities for those who follow. Certainly, real farmers must make a profit and they have as much right as anyone to the American Dream. But real farmers know, intuitively, that they must balance the economic with the social and ecological – the personal with the interpersonal and the spiritual -- not only for others but also for their own happiness and peace of mind.

Many small farmers may be small because they have balanced their self-interest with concerns for others and with some felt need to be in harmony with a higher order of things. A conventional, industrial farmer can no longer grow large enough, fast enough to survive, without sacrificing virtually everything else – including personal relationships and natural resources. Getting bigger faster is no longer a reasonable or viable option. The only farmers with a future are those who depend more on doing the "right things" rather than doing "things right" and on doing "better things differently" rather than on doing the "same things better." Farmers simply don't have time to be "real" farmers while they are preoccupied with becoming "big" farmers.

The difference between big and small among farmers is not a matter of the size of their fields or their bank accounts, but in what's taking place in their heads. A farmer who thinks that the only way to survive and prosper is through more technology, bigger equipment, more land, and more money is a big farmer no matter how small their farm. A farmer who thinks that the only way to survive and prosper is to find ways to get more out of what they already have – to learn to live better while using less land and less capital – is a small farmer no matter how large their farm. For the big farmer, farming is a bottom-line business. For the small farmer, farming is business but much more – it 's also a way of life.

Small farmers, by necessity, are practical. They can afford to be independent because they do it mostly themselves. They are authentic – the farmer and the person are one in the same. And if sustainable, their farms will be permanent. Small farmers are real farmers.

One of the greatest challenges in being a successful small farmer is the same challenge faced in being a successful human being – knowing how much is enough. Any small farmer who doesn't know how much is enough, will never feel that they have enough, will always be striving to get more, and really is a big farmer at heart -- no matter how

small their farm. Enough is not some future size or amount -- that will ensure success and happiness. Enough is about "right now." "Do you have enough right now?" If the answer is no, then what would it take to be enough right now? If you don't know, then how can you really know whether you have enough right now? If you never feel that you have enough, you'll spend the rest of your life always wanting more. The farmer who doesn't know how much is enough will never be satisfied on a small farm.

Organic farmers in particular are confronted with the question; "how much is enough for me?" Organic farming is changing, markets are growing, and national standards are coming, bringing new and different producers. So, what should organic farmers do? Should they expand, move into new markets, contract with corporations? Or should they stay small, try to benefit from the changes that could help, and guard against those that could hurt. The most important prerequisite to making these decisions is to know how much is enough? Those who can answer this question are more likely to remain of a size that will sustain their production and sustain a desirable quality of life. Those who don't know how much is enough, are more likely to be lured with the promise of more, will grow ever larger, and may well become a part of the problem they think they are trying to solve.

Will Small Farms have a Place in Our Future?

Do small farmers, organic or otherwise, really have a place in the future, or is this just some idealistic dream? Peter Drucker, a time-honored consultant to twentieth-century industry, says this in his book Post-Capitalist Society:

"Every few hundred years in Western history there occurs a sharp transformation. Within a few short decades, society rearranges itself -- its worldview; its basic values; its social and political structure; its arts; its key institutions. Fifty years later, there is a new world.... We are currently living through just such a transformation." (p. 1).

The thing most certain about the future is that it will be very different from today. The industrial era is behind us. Something fundamentally different lies ahead. Even as agriculture continues to industrialize, industrialization is already slowing, stopping, and even reversing in much of the rest of the economy.

Alvin Toffler, in his book Powershift, points out that many forecasters simply present unrelated trends, as if they would continue indefinitely, without providing any insight regarding how the trends are interconnected or what forces are likely to reverse them. The agricultural press is filled with such forecasts for the future of agriculture -- simply extending industrial trends into the foreseeable future. But, Toffler contends that the forces of industrialization have run their course and are now reversing -- that the industrial model of economic progress is becoming increasingly obsolete. He contends that mass production is no longer a symbol of "modern" business operation. The new "modern" model is to produce customized goods and services aimed at niche markets, to constantly innovate, to focus on value-added products and specialized production.

Drucker, in his book: The New Realities, talks of the "post business society." He states, "the biggest shift -- bigger by far than the changes in politics, government or economics -- is the shift to the knowledge society. The social center of gravity has shifted to the knowledge worker. All developed countries are becoming post-business, knowledge societies." (p. 173). Toffler agrees that "the most important economic development of our lifetime has been the rise of a new system of creating wealth, based.. on the mind" (p. 9). He contends that "the conventional factors of production -- land, labor, raw materials, and capital -- become less important as knowledge is substituted for them" (p. 238). "Because it reduces the need for raw material, labor, time, space, and capital, knowledge becomes the central resource of the advanced economy "(p. 91).

Robert Reich, former Secretary of Labor, addresses future trends in the global economy in his book, The Work of Nations. He identifies Symbolic-analysts as the "mind workers" of the future. They include all the problem-solvers, problem-identifiers, and strategic-brokers. They include scientists, design engineers, public relations executives, investment bankers, doctors, lawyers, real estate developers, consultants of all types, -- people who earn their living mostly by thinking. Like Toffler and Drucker, Reich believes that future human progress will result from symbolic-analysis, from mind work, rather than routine production work or personal services.

Drucker points out an important, fundamental difference between knowledge work and industrial work. He states that industrial work is fundamentally a mechanical process, whereas, the basic principle of knowledge work is biological in nature. He relates this difference to determining the "right size" of organization required to perform a given task. "Greater performance in a mechanical system is obtained by scaling up. Greater power means greater output: bigger is better. But this does not hold for biological systems. There, size follows function. It would surely be counterproductive for a cockroach to be big, and equally counterproductive for the elephant to be small. As biologists are fond of saying, 'The rat knows everything it needs to know to be a successful rat.' Whether the rat is more intelligent than the human being is a stupid question; in what it takes to be a successful rat, the rat is way ahead of any other animal, including human beings" (p. 259).

He concludes, that differences in organizing principles may be critically important in determining the future size and ownership structure of economic enterprises. Other things equal, the smallest effective size is best for enterprises based on information and knowledge work. According to Drucker, "'Bigger' will be 'better' only if the task cannot be done otherwise" (p. 260).

The sustainable agriculture paradigm is consistent with the visions of Toffler, Drucker, Reich and others of a post-industrial era of human progress. It is management intensive, individualistic, site-specific, and dynamic. The sustainable model is clearly biological rather than mechanical in nature. For biological systems, size and form must follow function and individual elements must conform to their ecological niche. Targeted niche marketing, less reliance on land and capital, knowledge intensive management, thinking workers and working thinkers, size scaled to function, smaller is better – these

visions of the future are all consistent with visions for a small-farm, sustainable agriculture.

But if all this is true, why are we currently seeing the rapid industrialization in some sectors of the agricultural economy, specifically in hog and dairy production? In Joel Barker's book: Paradigms, he points out that new paradigms tend to emerge while, in the minds of most people, the old paradigm is doing quite well. Typically, "a new paradigm appears sooner than it is needed" and "sooner than it is wanted." Consequently, the logical and rational response to a new paradigm by most people is rejection (p. 47). New paradigms emerge when it becomes apparent to some people, not necessarily many, that the old paradigm is incapable of solving some important problems of society. Paradigms may also be applied in situations where they are not well suited, thus creating major new problems while contributing little in terms of new solutions.

American agriculture provides a prime example of over application of the industrial paradigm. The early gains of appropriate specialization in agriculture lifted people out of subsistence living and made the American industrial revolution possible. But, more recent technological "advances" clearly have done more to damage the ecological and social resources of rural areas than any societal benefit they may have created from more "efficient" food production.

Industrialization of agriculture probably lagged behind the rest of the economy because its biological systems were the most difficult to industrialize. Agriculture by nature doesn't fit industrialization; it has to be forced to conform. Consequently, the benefits are less, the problems are greater, it is becoming fully industrialized last, and it likely will remain industrialized for a shorter period of time.

Sustainable agriculture is the new post-industrial paradigm for American agriculture. The sustainable agriculture paradigm has emerged to solve problems created by the industrial model, primarily pollution of our environment and degradation of our natural resource base. However, this new paradigm also addresses social degradation brought about by industrialization -- by creating opportunities for greater creativity, integrity, responsibility, dignity, and equity in work.

Sustainable agriculture is fundamentally about people – not production and profits. Industrialization initially was about creating a better life for people, but somewhere along the line the people part of industry got lost. People have become little more than small cogs in giant corporate machines producing and consuming lots of "stuff" that nobody really wants or needs. We're afraid to quit producing and consuming all this "stuff" for fear the giant machine might stop and we wouldn't know how to survive without it.

But, the big machine is running out of steam, and people are beginning to wake up to the fact that what we are doing simply is not sustainable. We are beginning to understand that the environment cannot absorb all the waste we're producing, that our greed will leave nothing for future generations, that corporations are not people, and

thus, can have no feeling or concern for people. We are beginning to realize that manufactured is not better than natural, synthetic is not better than organic, and bigger is not better than smaller. We are becoming interested in sustainability because they know, down deep, that the current system that is good for people.

The future will not be about more and better industrial technology; the future will be about people. Returning to Peter Drucker's Post Capitalistic Society:

"In the knowledge society into which we are moving, individuals are central. Knowledge is not impersonal, like money. Knowledge does not reside in a book, a databank, a software program; they contain only information. Knowledge is always embodied in a person, carried by a person; created, augmented, or improved by a person; applied by a person; taught by a person, and passed on by a person. The shift to the knowledge society therefore puts the person in the center."

People are at the center of sustainable agriculture. People are at the center of "true" organic farming. People are at the center of "real" small farming. In the society of the future -- the society that puts people at the center -- there will be a place of honor for sustainable small farms.

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