

Successful Farming is Mainly about Thinking¹

John Ikerd²

American agriculture is in the midst of a “great transition.” Agriculture as we have known it, with family farms and viable rural communities, is being rapidly transformed into an industrial agriculture, with factory farms and dying rural communities. Such times of change are times of great risks but also times of great opportunity. There are no guarantees of survival or success. But, an understanding of the forces of change can be quite helpful in coping with the risks of change and in realizing the opportunities. The forces driving change in American agriculture today are the continuing forces of industrialization.

The industrialization of agriculture is not a new phenomenon. The trend toward specialization, standardization, and consolidation – toward industrialization – began around the turn of the 20th century, with the mechanization of agriculture. However, the chemical technologies that emerged from World War II, particularly commercial fertilizers and pesticides, accelerated the industrialization process. Until recently, the most obvious consequence of this process had been larger farms, fewer farms, and fewer farm families. But, farmers and families, real people, were still making the decisions concerning what was produced, how it was produced, who it was produced for, and they considered how their decisions might affect the land and their neighbors.

Until recently, the specialization, standardization, and consolidation of farming had been driven by the decisions of individual, family farmers. Farmers freely chose to adopt the new mechanical and chemical technologies, many of which were developed through publicly supported research, because they seemed to promise increased profits. These technologies invariably promised greater production efficiency, which would reduce cost per unit of production, leaving the farmer with a wider profit margin. Increased efficiency generally meant that each farmer could produce more than before, in fact, needed to produce more to justify the new technological investment and to realize the full benefit of the new technology.

However, the “early adopters” were the only farmers to realize increased profits. As more and more farmers adopted a new technology, a new kind of machine or agri-chemical, total production invariably increased, because each farmer now was compelled to produce more. The new technologies allowed farmers to reduce costs per unit, but only if they produced more units. With increased production, market prices invariably fell, leaving even the innovators no better off than before. The later adopters rarely had a chance to recoup their investment before prices fell and profits were gone. In cases where the government supported commodity prices, land prices rose instead, with the same net effect on profits. Eventually, technological adoption was motivated by survival rather than profits, and those farmers who adopted too late didn't survive.

Some farmers had to fail so others could expand – could farm more land or produce more livestock – in order to realize the full benefits of the new technologies. In fact, prices invariably stayed low enough long enough to force enough farmers out of business to accommodate the

¹ Presented at National Small Farm Today Conference and Trade Show, Columbia, MO, Sponsored by Small Farm Today Magazine, Clark, MO, November 2, 2002

² John Ikerd is Professor Emeritus, University of Missouri, Columbia, MO – USA. web site:
<http://faculty.missouri.edu/ikerdj/>

new industrial technologies. And, after each “technological adjustment” was complete, there was always another round of technology waiting for adoption. Chronic crisis and continuing farm failures have been a necessary consequence of agricultural industrialization.

The current “corporatization” of agriculture is but the final stage of the industrialization process. As the new technologies have required larger and larger operations to justify the new investments, capital requirements have exceeded the credit capacity of all but the largest of individual farmers. Many farmers have formed family corporations to enhance their ability to raise investment capital. Increasingly, however, only the “publicly owned” corporations are able to meet the agricultural capital requirements of an increasingly industrial agriculture. Economists now proclaim corporate contracts as farmers' only means of gaining access to the technology, capital, and markets they will need to be competitive in the 21st century. Most of the land and basic production facilities are still owned by individual farmers and family corporations, but production increasingly is carried out under direction of giant agribusiness corporations.

The industrialization and corporatization of American agriculture has been supported by government policies – including government farm programs and publicly supported research and education programs. The overriding objective of such policies has been to increase the efficiency of agriculture for the ultimate benefit of consumers, in the form of lower food prices. The political rhetoric in support of family farming has continued; but government programs obviously have supported continued specialization, standardization, and consolidation, which have ensured the demise of the family farm.

At the signing of the new “Farm Security and Rural Investment Act of 2002,” the President said, “The farm bill will strengthen the farm economy... will promote farmer independence, and preserve the farm way of life for generations.” These same kinds of claims have been made for every U.S. Farm Bill since the 1930s. Yet, the farm economy has continually floundered and American agriculture has limped from one crisis to the next. And now, independent family farmers are becoming a rarity. This new Farm Bill will not do any of the things promised. It simply continues the policies of the past, which subsidize wealthy landowners and the agribusiness corporations, at the expense of family farmers. The new Farm Bill won't promote farmer independence or preserve the farm way of life. It most certainly will not provide for either “farm security” or “food security,” nor will it improve the lives of people in rural America

The survival and success of family farmers will depend on farmers, not the government. Farmers cannot preserve their independence by becoming increasingly dependent upon the government. Farmers cannot preserve the farm way of life by becoming “hired hands” for agribusiness corporations. A farm is secure only when the farmer's economic and social relationships are relationships of choice, not relationships of necessity. Once the survival of a farm becomes dependent on a contractor, a banker, a lawyer, or the government, there is no farm security. A nation is secure only when it is able to feed itself in a time of crises. Once the nation becomes dependent on multinational corporations for its food, there is no national security.

With increasing corporate control of the food system, even those independent producers with lower cost than the contract producers are finding it difficult to compete. The corporations now

control much of the new technology, particularly biotechnology, to which farmers can gain access only through contractual arrangements. Large corporate processors increasingly procure nearly all of their raw materials through contracts, thus denying market access, or at least denying competitive markets, to non-contract producers. The corporatization of agriculture is now driven much more by the quest for increased market share and greater market power than for increased production efficiency.

Family corporations are not all that different from individuals; their decisions reflect the basic values of the family. Even with “closely held” corporations, with few stockholders, decisions can still reflect the basic social and ethical values of the owners. However, once the number of stockholders becomes large, as in large publicly held corporations, and management is essentially separated from ownership, the motives for decision making become profits and growth. Most of the stock in such corporations is owned by mutual funds and pension funds, and the stockholders are concerned foremost, if not completely, with growth in the value of their investment. A corporately controlled agriculture is fundamentally different from the agriculture we have known in the past.

We don't need a lot of data, facts, or figures to understand what is happening to American agriculture; it's just plain common sense. In making agriculture more efficient, we have chosen industrial technologies and methods, which have resulted in fewer, larger farming operations, and now, corporate control of agriculture. In the process, we have lost both the security of our farms and the food security of our nation. These outcomes are the logical consequences of the objectives and strategies we have pursued. We have sacrificed our security for the sake of efficiency. It's not all that difficult to understand; it's just common sense.

So, what's wrong with a corporate, industrial agriculture? Why should we be concerned? First, many people don't see anything wrong with a corporate, industrial agriculture, and they are not particularly concerned. As long as the corporations can give them food that is quick, convenient, and cheap, they are not going to ask too many questions. They aren't all that concerned about where their food comes from, who produces it, how it is produced, and what the consequences are for rural people and for the land. Many trust the competitive forces of our “free market” economy to ensure that the needs of society are met.

However, a growing number of people are concerned about the corporate industrialization of agriculture. They are concerned about what it is doing to the lives of farm families who are losing control of land that has been in their families for generations. They are concerned about people in rural communities who have supported and been supported by those family farms. They are concerned about the low-pay and long hours in the food processing factories that have moved into some of these chronically depressed rural areas. They are concerned about the landfills, toxic waste dumps, and giant livestock feeding operations that pollute the once pristine rural environment with dangerous chemicals, biological wastes, and hazardous stench. They are concerned about the ability of the soil to continue to produce after the topsoil is eroded and it is saturated with chemicals and about the quality of water subjected to similar abuses. They are concerned about the safety of their food and safety of the people who work to produce it. They are concerned about the negative impacts of an industrial agriculture on the people who farm the land, who live in rural areas, who eat the food. They are concerned about those of future

generations who will still be as dependent upon the land for their sustenance, their very survival, as we are today. They are concerned about the sustainability of agriculture.

This growing concern for agricultural sustainability is raising some “common sense” questions about our food system. It asks, how can we equitably meet the needs of people in the present, while leaving equal or better opportunities for those of the future – not just how can we make food quick, convenient, and cheap? It asks, how can we develop an agriculture that is ecologically sound, economically viable, and socially responsible – not just how can we make agriculture more economically efficient? It asks, how can we ensure our long run food security – not just our current abundance? Sustainability asks, how can we sustain a desirable quality of human life on this earth, individually, socially, and ethically – both for ourselves and for those of future generations?

Sustainable farming systems must be ecologically sound, economically viable, and socially responsible. All three are essential; more of one cannot offset a lack of either of the other two. The three dimensions of sustainability are not a part of some formal or legal definition, but instead, are a matter of common sense. If the land loses its ability to produce, the farm is not sustainable. If the farmer goes broke, the farm is not sustainable. And if a system of farming fails to support society, it will not be supported by society, and thus, is not sustainable. The economic, ecological, and social dimensions of sustainability are like the three dimensions of a box. All are necessary. A box that is lacking in height, width, or length, quite simply is not a box. A farming system that is lacking in ecological integrity, economic viability, or social responsibility, quite simply is not sustainable.

There is growing evidence that current concerns for the sustainability of agriculture are well founded – that a corporate industrial food system, in fact, is not sustainable. The threats to the natural environment and to the quality of life of farmers, rural residents, and members of society as a whole have continually risen as we have industrialized American agriculture. The same technologies that support our specialized, standardized, large-scale farming systems are now the primary sources of growing environmental degradation. Commercial fertilizers and pesticides – essential elements in a specialized, industrialized agriculture – have become a primary source of growing concerns for environmental degradation and food safety. And, industrialization has transformed agriculture, which was created for the fundamental purpose of converting solar energy to human-useful form, into an industrial process that uses more non-renewable fossil energy than it captures in solar energy from the sun.

Industrial systems of production also degrade the human resource base. Henry Ford is quoted as once saying the biggest problem in running a factory is that you have to hire whole people when all you need is two hands. Large corporate contract farming operations transform independent decision-makers, into building superintendents and farm workers – into people who only know how to follow instructions or directions but not how to make decisions. At a recent conference in Minnesota, one farmer remarked, “any fool could grow a good crop of soybeans using the Roundup Ready system of Monsanto.” If any fool can grow a good crop of Monsanto soybean, just how much do you think anyone is going to get rewarded for doing it? And the answer, about the same as a fool can earn doing anything else – not much. We have transformed our farms into

factories, our fields and feed lots into biological assembly lines, and our farmers into low-skilled, low-paid assembly line workers.

There is dignity in all work, including assembly line work. However, as Adam Smith pointed out in, Wealth of Nations, “The man whose whole life is spent in performing a few simple operations... has no occasions to exert his understanding, or to exercise his invention in finding out expedients for removing difficulties which never occur. He naturally loses, therefore, the habit of such exertion, and generally becomes as stupid and ignorant as is possible for a human creature to become.”

With industrial agriculture, particularly contract agriculture, someone other than the farmer is doing all of the important thinking. Someone other than the farmer has developed the hybrid seed and the chemical fertilizers and pesticides that now nourish and protect the crop of industrial farming. Someone other than the farmer developed the breeds, feeds, and confinement facilities that now dominate animal agriculture. In many cases, someone other than the farmer decides which kinds and how much seed and chemicals to use and when to use them. In contract livestock and poultry operations, someone other than the farmer makes the decisions concerning buildings, breeding, feeding, medicating, and marketing. And in many cases, someone else even owns the live animals and decides when to bring them to the farm, and when to take them away. It doesn't take much thinking to be a contract producer – simply carry out someone else's instructions.

Someone other than the farmer is doing all of the productive thinking in commercial agriculture today, and someone other than the farmer is making all of the money. The one who solves the problem, benefits from the solution, the one who does something creative, benefits from the new innovation. It's just common sense. And equally important, those for whom “farming” has been reduced to performing a “few simple operations,” although possibly intelligent in other respects, “in farming” they “generally become as stupid and ignorant as is possible for a human creature to become.” A friend of mine once visited Russia to help those who had worked on the communist collective farms learn how to operate their own small farms. He commented that it was easier to teach former jet pilots how to farm than to teach Soviet farm workers how to farm. Former jet pilots at least knew how to make decisions, although they knew nothing about farming. For decades, Soviet farm workers simply followed some else's directions, and thus, no longer knew anything about farming or about how to make decisions. If people aren't challenged to think, they soon forget how to think. Again, it's simply a matter of common sense.

Industrial agriculture also leads to a loss of understanding, knowledge, and appreciation of the land. As farmers have come to rely on commercial inputs rather than the natural fertility of the soil, they have lost their appreciation for the value of understanding how to maintain the inherent fertility of the land. As livestock have been separated from the land and placed in large confinement operations, animal producers have lost all sense of connectedness to the land. As Wendell Berry, the Kentucky farmer, philosopher, and writer puts it: If the land is to be used well, we must have people on the land who know it well, know how to use it well, have time to use it well, and are able to afford to use it well. To farm sustainably, we must have people on the land who love the land. Industrialization has separated farmers from the land, if not physically, then mentally, or at least psychologically. Most farmers today don't even own the land they

farm. Most who own land don't have enough time or can't afford to care "for it," even if they do care "about it." They can't afford to love the land; they have to stay competitive in a global economy.

An industrial agriculture also leads to a loss of understanding, knowledge, and appreciation of people. Today, farmers can't be too concerned about their neighbors, because they know their neighbor will have to fail in order for them to succeed. They can't love their neighbor, because, sooner or later, they will have to have their neighbors land to survive. Neither can farmers be too concerned about the welfare of consumers, because they need a share of the consumers' income to survive. No matter what tactics the processors and retailers use to separate consumers from their money, or how small the farmers' share, if the consumer doesn't buy, the farmer can't sell. Farmers, processors, retailers, consumers, are locked in economic competition, in pursuit of their individual self-interests.

No one set about intentionally to destroy the ecological integrity, social responsibility, or economic viability of American agriculture. We simply lost sight of the fundamental purpose of agriculture, to meet the needs of people – as consumers, as producers, as members of rural communities, and of society. In our preoccupation with making agriculture more productive, we have taken the thinking out of farming; we have degraded the occupation of farming, and diminished the intellectual, social, and economic rewards of being a farmer. In our preoccupation with increasing economic efficiency to bring down the cost of food, we neglected to monitor what was happening to the overall quality of life of people. In our preoccupation with increasing production today, we neglected to monitor the ecological legacy we were leaving those of future generations. We don't need a lot of data, facts, or figures to understand what has happened to American agriculture; it's just plain common sense.

This time of "great transition" is not unique to agriculture. A new era of development is beginning to emerge in virtually every sector of modern society. The old industrial era is dying and a new era of sustainability is struggling to be born. Agriculture is just at a slightly different phase of transformation than is much of the rest of society. The corporatization of agriculture is the last gasp of a dying age. However, the same basic forces now emerging to create a new agriculture and a new rural America already are fundamentally transforming much of the rest of the world. And, those who expect to be successful in this new world of the future, in farming or in any other occupation, must be both willing and able to think.

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."

The thing most certain about the future is that it will be very different from today. The industrial era is behind us, and something fundamentally different lies ahead. Although agriculture is still

caught in the grips of industrialization, corporatization is the final phase of the industrial process. Much of the rest of the developed world already is moving beyond industrialization. The giant global corporations of today are but an unfortunate remnant of this past era. They exist not because they are more productive or efficient than other forms of organization, but only because of the economic and political power they were able to amass when industrialization was in its prime. Multinational corporations have lost their usefulness and value to society, and ultimately, must lose their economic and political power.

Noted futurist, Alvin Toffler, in his book Powershift, points out that many forecasters simply present unrelated trends, such as industrialization, as if they would continue indefinitely. But, by simply extending trends, they fail to provide any insight of how trends are interconnected or when and why trends might change. The agricultural press is filled with such forecasts for the future of agriculture – simply extending industrial trends into the indefinite future. Biotechnology and information technologies are presented as nothing more than new tools of industrialization. But, Toffler contends that the industrial model of economic progress is becoming increasingly obsolete, and he talks of a new knowledge-based era of development.

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." 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." "Because it reduces the need for raw material, labor, time, space, and capital, knowledge becomes the central resource of the advanced economy," he writes.

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." 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."

But if the industrial era is ending, why are we 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. 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.

The increasing corporate control of agriculture today is no longer a reflection of greater efficiency or lower production costs for industrial methods. Instead, it is a reflection of the ability of the giant corporations to enhance their profits by controlling global markets for agricultural commodities. Corporatization brings a century of agricultural industrialization to its logical conclusion, spelling the end of the agricultural industrialization process. After corporatization, something fundamentally new and different will emerge. The corporatization of agriculture, thus, creates an opportunity to develop a new and fundamentally better paradigm for farming, a sustainable agriculture.

Thankfully, a new breed of American farmer has emerged to develop this new and better paradigm for farming. They have emerged in response to growing concerns about the negative ecological and social impacts of the corporate, industrial model of agriculture. These new farmers are concerned about the ecological, social, and economic sustainability of agriculture. However, the success of this new type of farming also has important implications for food safety, food quality, food security, and our overall quality of life for all of society.

While there are no "blueprints" for the *New American Farm*³, some basic characteristics are emerging. First, these farmers see themselves as stewards of the earth. They are committed to caring for the land and protecting the natural environment. They have a deep sense of respect

³ For 50 real life examples, see "The New American Farmer – Profiles in Agricultural Innovation," the SARE Program, USDA, Washington DC. (\$10 US – call: 802-656-0484 or e-mail: sanpubs@uvm.edu , also available free on line at <http://www.sare.org/newfarmer>)

and commitment and a growing understanding of the land. They work with nature rather than try to control or conquer nature. They fit the farm to their land and climate rather than try to bend nature to fit the way they might prefer to farm. Their farming operations tend to be more diversified than are conventional farms – because nature is diverse. Diversity may mean a variety of crop and animal enterprises, crop rotations and cover crops, or managed livestock grazing systems, depending on the type of farm. By managing diversity, these new farmers are able to reduce their dependence on pesticides, fertilizers, and other commercial inputs that squeeze farm profits and threaten the environment. Their farms are more economically viable, as well as more ecologically sound, because they farm in harmony with nature.

Second, these new farmers build relationships. They tend to have more direct contact with their customers than do conventional farmers. Most either market their products direct to customers or market through agents who represent them with their customers. They realize that as consumers each of us value things differently because we have different needs and different tastes and preferences. They produce the things that their customers value most. They have a strong sense of respect for people in general and a growing understanding of the needs and preferences of their particular customers. They are not trying to take advantage of their customers to make quick profits; they are trying to create long-term relationships. They market to people who care where their food comes from and how it is produced – locally grown, organic, natural, humanely raised, hormone and antibiotic free, etc. – and, they receive premium prices by producing foods their customers value. Their farms are more profitable as well as more ecologically sound and socially responsible.

These new farmers challenge the stereotype of the farmer as a fiercely independent competitor. They freely share information and encouragement. They form partnerships and cooperatives to buy equipment, to process and market their products, to do together the things that they can't do as well alone. They are not trying to drive each other out of business; they are trying to help each other succeed. They refuse to exploit each other for short run gain; they are trying to build long-term relationships. They buy locally and market locally. They bring people together in positive, productive relationships that contribute to their economic, ecological, and social well-being. They value people, for personal as well as economic reasons, and have a growing understanding of how to build and maintain good human relationships.

Finally, to these new farmers, farming is as much a way of life as a way to make a living. They are “quality of life” farmers. To them, the farm is a good place to live – a healthy environment, a good place to raise a family, and a good way to be a part of a caring community. Many of these farms create economic benefits worth tens of thousands of dollars, in addition to any reported net farm income. Their “quality of life” objectives are at least as important as the economic objectives in carrying out their farming operations. Their farming operations reflect the things they like to do, the things they believe in, and the things they have a passion for, as much as the things that might yield profits. They are connected spiritually through a sense of purpose and meaning for their lives. However, for many, their products are better and their costs are less because by following their passion they end up doing what they do best. Most new farmers are able to earn a decent income, but more important, they have a higher quality of life because they are living a life that they love.

There are literally thousands of these new farmers who are creating new and better ways to farm. They may label themselves organic, biodynamic, ecological, natural, holistic, practical, innovative, or nothing at all; but they are all pursuing the same basic purpose. They are on the frontier of a new and different kind of agriculture, an agriculture capable of meeting the needs of the present while leaving equal or better opportunities for those of the future – a sustainable agriculture. These farmers face struggles and hardships and there are failures along the way. Life is rarely easy on any new frontier. But, a growing number are finding ways to succeed.

These new American farmers are getting very little help from government farm programs, from publicly funded research and education programs, or from anyone else in the “agricultural establishment.” The government and public universities at least are becoming aware of the sustainability movement, especially through the growth of markets for organic foods. However, the few million dollars of public money allocated to support sustainable agriculture is but a pittance when compared with the billions of tax dollars subsidizing corporate, industrial agriculture. These new farmers glean information from wherever they can find it; some of the best available published sources are often several decades old. They also learn from each other. But for the most part, they have learned to rely on their own experiences, and equally important, on their common sense. They have rejected the conventional wisdom of industrialization, and instead have embraced the common sense of sustainability.

Sustainable farming is thinking farming. It requires an ability to translate observation into information, information into knowledge, knowledge into understanding, and understanding into wisdom. Agricultural has been characterized as the first step beyond hunting and gathering. But historically, farming was still considered a low-skill minimum-thinking occupation that almost anyone could do. Industrialization then was said to be the next step beyond agrarianism – beyond agriculture. Higher skilled factory work was considered a step up from farming. Sustainable farming, however, is not the “first step beyond hunting and gathering.” Sustainable farming is a step beyond high-skilled factory work – it is “mind work.” Certainly, the new sustainable farming systems involve some hard work, but it is mostly about thinking.

Sustainable agriculture is very much in harmony with a post-industrial paradigm of economic and human development. Sustainable agriculture even goes beyond “knowledge-based” development – in that it requires understanding and wisdom. Sustainable farmers provide valuable personal services and societal benefits, which require a sense of ethics and social responsibility as well as intellect. Sustainable farmers are “thinking workers” – or “working thinkers” – as well as thoughtful, caring people. They combine the physical, mental, and spiritual dimensions of productivity. Contrary to what some have suggested, that America must abandon agriculture as it moves beyond industrialization, America simply needs to embrace this new kind of agriculture that brings with it a new vision for a sustainable future.

The sustainable agriculture paradigm the new American farmers are pursuing is completely consistent with the visions of Toffler, Drucker, Reich and others of a post-industrial era of human progress. It is holistic and integrative – not specialized or segmented. It is diverse, dynamic, and site specific – not standardized and routine. It is management intensive and interdependent – not management extensive and centralized in control. The sustainable model of farming is clearly biological rather than mechanical in nature – where size must conform to

function. Targeted niche markets, less reliance on land and capital, knowledge-intensive management, hands-on management, size scaled to function, smaller is better – these visions of the future are all consistent with visions of a sustainable agriculture.

Successful farming is mostly about thinking. People are uniquely capable of thinking, thus, successful farming is mostly about thinking 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."

Successful farming is about information, successful farming is about knowledge, but equally important, successful farming is about having the wisdom to use information and knowledge to meet the needs of people, of all people, both today and in the future. Successful farming is mostly about thinking, but not just about thinking, because successful farming ultimately is about thinking about how to sustain a desirable quality of life for people.