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Agriculture Without Farmers? Is Industrialization Restructuring American Food Production and Threatening the Future of Sustainable Agriculture?

NEIL D. HAMILTON*

"No other occupation opens so wide a field for the profitable and agreeable combination of labor with cultivated thought as agriculture."¹

"The husband that Laboreth must be first Partaker of the Fruits."²

I. THE EMERGING CONFLICT BETWEEN INDUSTRIALIZATION AND SUSTAINABLE AGRICULTURE

American agriculture is changing rapidly--becoming more concentrated, more technically advanced, and more integrated with the input and marketing sectors. Thomas Urban, President of Pioneer Hi-Bred International, Inc., the world's largest supplier of hybrid seed, believes that "[p]roduction agriculture in the Western World is now entering the last phase of industrialization--the integration of each step in the food production system. The production is rapidly becoming part of an industrialized food system."³ He describes industrialization as the process whereby the production of goods is restructured under the pressure of increasing levels of capital and technology in a manner which allows for a management system to integrate "each step in the economic process to achieve increasing efficiencies in the use of capital, labor, and technology."⁴ But the thought that American agriculture is in the final stages of becoming industrialized is not a welcome

* Ellis and Nelle Levitt Professor of Law, and Director of the Agricultural Law Center, Drake University. Copyright reserved by the Author.

1. President Abraham Lincoln, Inscribed on the USDA Building, Washington, D.C.

2. Saint Paul, Inscribed on the USDA Building, Washington, D.C.

3. Thomas N. Urban, *Agricultural Industrialization: It's Inevitable*, CHOICES, Fourth Quarter 1991, at 4.

4. *Id.*

thought to many observers who question whether application of an industrial model to agriculture is in the long-term public interest. Marty Strange, co-director of the Center for Rural Affairs in Walthill, Nebraska, is a longtime observer and vocal critic of the move to an industrial agriculture. He notes: "The principal organizational characteristic of industrial enterprise is the separation of ownership from operation. There are owners (investors) and workers, plus managers who run the affairs of both owners and workers.⁵ Strange believes this separation of ownership from operation can be seen in American agriculture, noting that "[m]ost important, as competition for land among expanding farms increases land values, the tendency is to separate farm ownership from farm operation. This trend toward industrial or factory organization is evident on nearly every farm in America."⁶

Urban and Strange are talking about what economists refer to as the "structure of agriculture"--the economic organization of agriculture. The structure of agriculture is determined by many factors, such as: who owns the land, the sizes and types of farms, the distribution of wealth, who controls decision making, how farms acquire inputs and market production, and all the other things which determine not just how agriculture operates but also how the food system functions to meet the objectives set by the American public. Another way of looking at the structure of agriculture is to consider who will control agriculture--who will own the land, perform the labor, market the food, and profit from agriculture?⁷

Throughout most of the history of our nation the structure of agriculture was based on the family farm--a powerful and effective form of economic organization but also one which has provided important social and political value to the development of our nation. The story of American agriculture has been told quite eloquently by several authors. In his book, Marty Strange described the rise and development of the family farm but also explained the power and value of this system of organization to our nation.⁸ Strange has worked for over twenty years at the Center for Rural Affairs and is a leading voice for why we must protect the family farm as

5. Marty Strange, *The Economic Structure of a Sustainable Agriculture*, in MEETING THE EXPECTATIONS OF THE LAND: ESSAYS IN SUSTAINABLE AGRICULTURE AND STEWARDSHIP, 100, 116 (Wes Jackson et al. eds., 1984).

6. *Id.* at 117.

7. These issues were the subject of a series of reports completed by agricultural economists as part of a study sponsored by the North Central Region of the Extension Service in the 1970's. See, e.g., NORTH CENTRAL REGIONAL EXTENSION, *Who Will Control U.S. Agriculture?: Policies Affecting the Organizational Structure of U.S. Agriculture*, 32 (1972).

8. See generally MARTY STRANGE, *FAMILY FARMING: THE NEW ECONOMIC VISION* (1988).

the building block of our food and agriculture system.⁹ Another leading player in the nation's debate over the future of farming is Professor Harold F. Breimyer. In a long career as a United States Department of Agriculture ("USDA") economist and then professor of agricultural economics at the University of Missouri, he passionately focused attention on who would control American agriculture.¹⁰ But Strange and Breimyer both know, perhaps better than most, the pressures today's farmers are under - pressures to increase in size to obtain market share and pressures to link with agribusiness to produce or market commodities. These are the forces leading toward an industrial agriculture.

But in many ways the pressures for change are not new. The historic structure of agriculture has been under constant pressure for many years. At the turn of the century over twenty-five percent of the American population was still involved directly in farming, but today that number has slipped below two percent. The year of my birth, 1954, there were still close to five million farms in the nation, but that number has now dropped to fewer than two million. But even those numbers don't tell the true story of the variations in size and concentration of sales which exist. In reality most of the nation's food and fiber is produced on 600,000 full-time commercial farms, the large majority of which are still family operations in the Midwest.

With the changes in farm numbers have come considerable economic changes not just in the structure of remaining farms and the concentration of land, but also in the businesses which provide inputs to farmers and market their commodities. Implicit in the changes in the structure of agriculture are innumerable social and political issues which shape not just how food is produced and marketed and by who, but also how the land is treated, how technologies are developed and employed, and in essence the question of "what is agriculture?" The changing structure of agriculture received the most focused attention in the late 1970's when Bob Berglund, Secretary of Agriculture under President Carter, initiated a national study and dialogue on the issue. The final report was completed at the very end

9. In August 1974, the Center for Rural Affairs published a study on vertical integration and large scale hog production in Nebraska, which raised concerns over the impact the industrialization in swine production then beginning could have on the long term health of the sector for independent producers. CENTER FOR RURAL AFFAIRS, *Who Will Sit up With the Corporate Sow?* (1974). The issues raised in this study are now directly under debate in the Midwest.

10. Professor Breimyer's memoirs of his career in agriculture have been published and provide an interesting insight into the forces which have shaped agricultural policy in the United States. See generally HAROLD F. BREIMYER, *OVER-FULFILLED EXPECTATIONS: A LIFE AND AN ERA IN RURAL AMERICA* (1991).

of the Democrats' term in office.¹¹ The study of the structure of agriculture, which at any time raises difficult social, political, and economic issues, was so controversial there were concerns whether the new Reagan administration and in-coming Secretary of Agriculture John Block would even release the final report.¹² The report was released but the issue of the structure of agriculture was not mentioned by the new leadership in the USDA because to them it was a non-issue. This was the story throughout the 1980's, the economic and social forces reshaping agriculture continued unabated, even accelerating with the extreme financial crisis in farming; however, addressing the issue of structure was left to "fringe" groups struggling to "preserve the family farm." But the fundamental issues raised in the USDA report have not disappeared, and the family farm while under pressure still maintains great resilience both as an economic unit and as a vehicle to provide society with the objectives it desires from agriculture.¹³

Today the structure of agriculture is again coming into focus as an issue for local and national concern, as the process of industrialization which Urban talks about proceeds across the land. The debate over industrialization, is one the nation should join, because it will provide us with the opportunity to examine the structure of farming and agriculture and determine what forms are best suited for our future. Whether we will join this debate is uncertain. Agriculture has had difficulty dealing with structural issues for several basic reasons. First, the discussion is an implicit criticism of the existing institutions and policies which led us to where we are, and no one likes to be pointed out as the villain in any story. Second, we have a national tendency to presentism, i.e., viewing things from the perspective of today which makes it easy to see current features or trends as the way it should be and to respond to critics, such as those who would defend the family farm, as being locked into a nostalgic vision of the past. That is why the typical response to those who defend the family farm is "we can't go back to 40 acres and a mule!" even though no one endorses such a vision. Third, any effort to in fact deal with the forces altering the structure of agriculture would require serious scrutiny of existing economic and political power, and a willingness to engage in political heavy lifting,

11. See U.S. DEP'T AGRIC., A TIME TO CHOOSE: SUMMARY REPORT OF THE STRUCTURE OF AGRICULTURE (1981).

12. For a discussion of this episode, see BREIMYER, *supra* note 10, at 242.

13. See Donald Worster, *Good Farming and the Public Good*, in MEETING THE EXPECTATIONS OF THE LAND: ESSAYS IN SUSTAINABLE AGRICULTURE AND STEWARDSHIP 37 (Wes Jackson et al. eds., 1984) (making the excellent point that one main problem with United States farm policy is we have never asked ourselves what "we as a society want out of farming in the future").

in the form of examining existing policies, drafting new legislation, and implementing reforms. All of these take considerably more effort and result in much more controversy than watching "natural economic forces" play themselves out on the stage of modern agriculture. The truth is many people and organizations involved in agriculture either have a strong self-interest in continuing the processes leading to industrialization, or do not have the stomach for the debate about it.

At the same time that industrialization has come into focus another equally important force has begun sweeping American agriculture and that is the concept of "sustainable agriculture."¹⁴ This development has largely been an outgrowth of increased attention to environmental issues but also finds its base in the extension of the ethical and historic structure of farming in the United States.¹⁵ The basis of the concept is no agricultural system can be successful in either the short or long term unless it is designed to sustain the resources necessary for its operation. These resources include both physical resources, of soil, air and water, but also human and social resources of farm families, rural communities, and the economic structure necessary for an agrarian system to function.

Attention to creating a "sustainable agricultural" policy for the United States has begun leading to changes in how we organize and fund agricultural research, how we shape federal farm programs, and how we promote protection of the environment. But sustainability is also inexorably linked to the issue of structure, and the forces leading to the industrialization of American agriculture may pose the gravest threat to our ability to develop a sustainable agriculture. The goal of this essay is to explore the linkage between these two developments. It begins with reflections on the contradictions in American attitudes to agriculture which help set the stage for understanding the dilemma we face as a nation. The essay next looks in more detail at the issue of the industrialization of agriculture, and considers how it is related to declines in farm numbers and the role of farming. The essay considers whether there is an agricultural canon in our nation and if so what it means for the future of farming. The relation of structural issues to promoting sustainable agriculture is also addressed. From this basis the essay concludes with a discussion of why there are reasons for optimism about the future of farming and provides several

14. For a general discussion of this issue and its relation to the legal community, see Neil D. Hamilton, *Sustainable Agriculture: The Role of the Attorney*, 20 ENVTL. L. REP. 10,021 (1990).

15. One of the most influential books contributing to the current attention to sustainable agriculture is MEETING THE EXPECTATIONS OF THE LAND: ESSAYS IN SUSTAINABLE AGRICULTURE AND STEWARDSHIP (Wes Jackson et al. eds., 1984).

suggestions for steps we can take to use law to both confront and help shape the forces affecting our food and agriculture system.

II. CONSIDERING THE CONTRADICTIONS IN AMERICAN ATTITUDES TOWARD AGRICULTURE: WHAT DO WE WANT FROM FARMERS?

As a child of the Iowa soil and a long-time student of agricultural law and policy the current situation in American agriculture fills me with ambivalence about what the future holds for American farmers. On the one hand farmers have never been more productive or had a wider range of technologies to utilize in producing food and fiber. Nor has our well fed society ever had the range of food products available now nor paid so low a portion of its income to obtain them. But at the same time serious doubts about the health of American agriculture abound. Rapid changes in the number of farmers and the economic structure of agriculture threaten both the independence and future of the traditional farming system. Questions of agriculture's impact on the environment and about the safety of our food supply are altering how the public sees farming, diminishing generations of good will and political support. Reflecting on these divergent trends makes one question how the laws and policies to address such issues will be shaped. Undoubtedly we will continue to have farmland and food will continue to be produced in our nation. Consumers will continue to thrive and will be presented an increasingly diverse array of processed foods. But real questions exist over who will produce the food and how it will be raised, who will market it and at what prices. I fear however these questions may continue to be ignored as we are content to let market forces, time, and inattention resolve the issues for us. Only by identifying the tensions in agricultural and food policy and trying to articulate the issues in question can we hope to shape the future of farming in ways society desires. The first step in doing so is to identify the contradictions which define the current food and agricultural debate.

Even a brief review of the current issues in American food and agricultural policy reveals the many contradictions at the heart of the debate. The resolution of these contradictions, outlined below, will help to answer the question of what is the future of American agriculture. By considering these contradictions readers can begin to understand both the tension and uncertainty which underpins the future of American agriculture. Hopefully the reader can also begin to feel the optimism possible if our nation can identify options to resolve the contradictions and develop an agricultural policy which will sustain us--a policy which will feed our future.

A. CONFRONTING OUR AGRICULTURAL ILLITERACY

An observer of the American diet and food buying habits might conclude the American consumer in recent decades has been transformed into a discerning buyer moved by the winds of diet and health concerns, knowledgeable about fat content, calories, and alleged food risks. But the reality is these same consumers are increasingly illiterate about how the food they consume is produced, who produced it, or about how issues of farm policy greatly shape not just the farm economy but also what appears on the grocery shelf. In 1988, the Board on Agriculture of the National Research Council published a report which documented our agricultural illiteracy.¹⁶ The reports notes that "[m]ost Americans know very little about agriculture, its social and economic significance in the United States, and particularly, its links to human health and environmental quality."¹⁷ The study noted a major reason for this agricultural illiteracy, "[f]ew systematic educational efforts are made to teach or otherwise develop agricultural literacy in students of any age. Although children are taught something about agriculture, the material tends to be fragmented, frequently outdated, usually farm oriented, and often negative or condescending in tone."¹⁸

The gulf between our apparent concerns for health and our understanding of the scientific and economic processes of agriculture has many effects. It results in consumers susceptible to the latest food trend or health scare.

But these same consumers remain largely unconcerned with how their food buying habits influence both the quality of the food available and the economic health of the people they depend on to produce it. Consumers need to realize their buying decisions can be harnessed as a tool to promote agricultural policies which can insure quality food, a clean environment, and profitable independent farmers.

B. OUR DESIRE FOR CHEAP, CONVENIENT FOOD

A contradiction to our apparent concern for safe food is the overriding role of price, cosmetic appearance, and convenience in determining what we buy and consume. Even though we purchase millions of gourmet cookbooks and watch endless cooking shows on television, changes in American lifestyles have resulted in less time for food preparation, less knowledge of how to cook, and more consumption of food away from the home. This has

16. See generally NATIONAL RESEARCH COUNCIL, UNDERSTANDING AGRICULTURE: NEW DIRECTIONS FOR EDUCATION (1988).

17. *Id.* at 9.

18. *Id.*

left consumers increasingly vulnerable to the food choices made for them by marketing conglomerates and the fast food chains. While we like to talk a good game about our desire for high quality, safe food the trends are to more processed foods with a higher portion of the cost reflecting processing and convenience than the food content. Even our school lunch programs, considered by many to be the one place children would be sure to get a nutritious meal, are now being revealed as high in fat. In some cities school administrators are turning school lunches over to fast food chains in an effort to increase school revenues and increase student attendance. While consumers express a concern for safety and nutrition, our buying habits belie both our understanding and commitment to sound nutrition. Consumers can support the development of alternative sources of basic foods, such as direct farmer consumer marketing and food cooperatives. They can also create adequate demand for possibly safer, but more expensive foods such as organic or natural foods. But if consumers do not use their food dollars to support markets for high quality farm produced foods, how can we expect farmers to raise and market these products.

C. ADDRESSING REAL HEALTH CONCERNS

We express a concern for food safety and limiting environmental risks, focusing much of our attention on issues such as pesticide contamination of food or groundwater quality. While these concerns are not insignificant our attention to them masks our inattention to addressing more significant health risks, such as food borne illness caused by microbial contamination unsuppressed by undercooking or unwise eating habits which contribute to poor health. Our focus on other perceived risks and the debate over how to address them, as seen in opposition to proposals to amend the Delaney clause--an increasingly rigid and unworkable measure--limits our willingness to consider alternative food safety measures. In other words while we drink our Evian and await our rare burger, we declaim proposals to study technologies such as food irradiation. At the same time the food industry busies itself fighting efforts to increase information given consumers, such as safe handling guidelines for raw meat and nutritional labeling, for fear it will scare consumers or result in lost market share.

D. DENYING OUR LOVE OF MEAT

The American diet is built on our passion of consuming meat. In recent decades meat consumption has shifted in response to health concerns over fat and cholesterol, increasing demand for fish and poultry. But red meat producers have fought for markets by altering livestock genetics, production techniques and marketing. Promoting pork as "the other white

meat," is a good example of efforts to provide consumers leaner, healthier cuts. But while the reality is we are and will probably remain a nation of meat eaters, increasing undercurrents in society, such as the animal rights movement and environmental concerns, challenge the very notion of meat consumption and production. Society's answer is two-fold, first, we embrace some themes of the animal rights movement, such as anti-fur campaigns, but continue to eat meat. Second, we conveniently avoid thinking about either how or why meat animals are raised. We delude ourselves by thinking the conveniently packaged steaks in the meat counter were produced in a factory like boxes of cereal. But by ignoring the reality of meat production, made easier by society's increasing separation from its agrarian roots, we give comfort to animal rights activists whose goal is to end all livestock production. In so doing we help threaten the existence of the farmers who raise the steers and pigs we love to consume. It is also ironic that while many of us clamor to focus on such "issues" as farm animal welfare, we ignore more significant social ills. Hunger has not been eradicated in our nation of plenty and its existence should be a national shame. The social and economic welfare of the millions of rural residents, including the over twenty-five percent of children who live in poverty, receives little attention or public concern.

E. STEWARDSHIP PROCLAIMED

A tenet of the Agrarian Creed has been that the farmer is a dedicated steward of the land who cares more than anyone else about preserving its productivity so it can be passed on for future generations. The farmer's commitment to stewardship is deeply rooted in agricultural policy and law. But while there is much evidence to document American agriculture's attachment to the land and embrace of stewardship ideals, there are also important reasons to question how far this ideal can take us. While farmers are without question interested in the future productivity of the land, they also operate in a world of short term economic pressures and farm programs which emphasize maximizing present production, forces which pressure the commitment to stewardship. The increasing separation of ownership of farmland from its operation, as reflected in the fact more than fifty percent of American farmland is farmed under short-term tenancy relations, adds to the potential tension. Public suspicions of farmer's claims to the title of stewards are also fueled by the opposition many farm groups raise whenever anyone, such as a nasty "environmentalist" has the audacity to question the performance of agriculture and its impact on the environment. Recent attempts by some farm groups to turn any debate over environmental protection into a referendum on "property rights" is a further unwarranted attempt to mask the true issues. But farmers should recognize the legitimate

interest of the public in developing a sustainable agriculture system, and use this public support to justify substantial support for agriculture. By doing so the nation can identify and address any real threats agricultural production may present. Only then will farmers and agriculture be able to claim the mantle of stewardship to which they aspire.

F. INTERNATIONAL TRADE FOR WHOM?

Since the early 1970's, agricultural exports have been the juggernaut of American international trade. Exports of farm products are one of the few bright spots in our trade balance. The promotion of exports has resulted in fundamental shifts in American agriculture both as to how federal farm programs are written and which crops are produced. The inability to resolve disputes over agricultural export markets has stalled the world trade talks and nearly brought the GATT round to the edge of collapse. Our desire to expand exports has led to expensive export subsidy schemes which have profited multinational grain exporters, subsidized consumers in previously cash buying nations, and even assisted the military buildup in Iraq. We have rewritten much of our farm policy around the myth of export salvation but the reality is increased exports may not have helped the economic situation of many American producers. But to even raise questions about our export dependence, such as to ask "If farmers sell crops below the cost of production, or in ways which do not cover the environmental costs, then who does benefit from exports?" is considered heretical. The United States has pursued an exports at any cost policy, focusing primarily on bulk commodities. We have not hesitated to force the rewriting of domestic policies in other nations such as Mexico, Japan, and the European Union members to increase grain markets. But the real action and potential growth in exports is elsewhere. The most promising markets for agricultural products emerging around the world are for high value products such as meat, wines, fruit, and processed or prepared food. Other major agricultural trading nations have recognized the potential for these markets but our attention remains on low value commodities. When the Cold War we fought to win ended and markets opened for pork in the Russia, the United States dawdled and lost the market to other countries. One questions the value of our gains in the GATT talks if we can't move deliberately to develop markets for which we have a natural advantage. Exports will undoubtedly be important to American farmers but determining what we can sell at a profit and recognizing that international economic development is often a pre-condition for expanding trade, are issues we must address.

G. IS FARM POLICY INTELLECTUALLY BANKRUPT?

Since the 1930's, the American farm economy has been shaped by a series of federal farm programs designed to address the converging need to improve the agriculture economy and protect natural resources. The mechanisms for farm programs we developed in the 1930's have evolved and been refined but for the most part the policies of today reflect the same approaches. We use price support loans to provide price stability, deficiency payments and subsidies for income maintenance, and balance supply with demand by imposing production controls based on land retirement. These programs delivered through a locally administered decentralized system infuse billions of dollars into American agriculture annually. More importantly the programs have determined what crops we produce, as well as where and how they are raised; influenced the market value for farmland; and shaped the structure of farming. But the programs are not without critics who label them as rigid and inflexible, promoting over-production of surplus crops and encouraging environmentally damaging farming practices.¹⁹ Other critics charge the programs are based on a series of myths both about the structure of American agriculture and the purpose and effect of farm programs.²⁰

In recent years federal farm programs have been modified to include important soil conservation requirements, but even those gains are threatened by declining benefits which makes non-participation in the programs a more attractive and less restrictive option for many farmers. While the farming establishment has a great attachment to the programs, if through nothing more than inertia and familiarity, the reality may be it is time to reconsider the very reasons for farm programs. Issues important to our nation--food safety, environmental protection, rural development, and international trade--are not adequately addressed by current programs. In other words, the programs may be intellectually bankrupt, but our attachment to them and fear of the future may be preventing us from considering possible reforms. Options for reform do exist, such as decoupling public farm supports from what we produce and recoupling them to how we produce--a greening of farm programs. The recent revenue assurance proposal developed by a

19. This was in large part the theme of the influential and controversial report, NATIONAL RESEARCH COUNCIL, *ALTERNATIVE AGRICULTURE* (1989).

20. One of the most valuable discussions of American farm policy written in recent years is WILLIAM P. BROWNE ET AL., *SACRED COWS AND HOT POTATOES: AGRARIAN MYTHS IN AGRICULTURAL POLICY* (1992). The book was the Annual Policy Review of the National Center for Food and Agricultural Policy located in Washington, D.C.

group of Iowa producers offers an interesting option for reform.²¹ Only by recognizing the conflicts between the basis for current farm programs and their effect, and by articulating our national goals for agriculture and farming can we renovate federal farm programs to make them valuable for our future.

H. AGRICULTURE'S ADDICTION TO NEW TECHNOLOGY

The productive success of American agriculture has been a function of many things, fertile soils, a generous climate, and hard working farm families. These factors were important but most observers would agree that without American agriculture's access to and use of new technologies our productive success would have been limited. Whether it was John Deere inventing the moldboard plow, Henry Wallace marketing hybrid corn, or Roswell Garst promoting use of nitrogen fertilizer, the history of American agriculture is a study in increased productivity through adoption of new technology. Agriculture today is no different. It faces a period of potential technological advance some would argue may out shine past gains. The advent of biotechnology and genetically engineered products now reaching the market, and new production practices, such as prescription farming using satellites to locate a field position and deliver the inputs indicated on a field map, are examples of the technologies farmers will have the opportunity to consider. But the continuing application of science and technology to agricultural production is not without controversy. Some producers, such as dairy farmers questioning the sale of BST, ask why we need new methods to enhance productivity when profitability not productivity is the real need. Consumers question the safety and even ethics of some technologies, as reflected in the debate over genetically engineered foods. Adopting new technologies raises questions of cost for producers and even access. Many new technologies, such as high value seeds, may only be available to producers who sign production contracts with the manufacturers who desire to market the production in order to capture the "added value" they contributed. Unfortunately anyone who questions the wisdom of new agricultural technologies risks been labeled a Luddite. Debate over the role of social policy in determining research agendas at public institutions such as land grant universities, on such questions as breeding herbicide resistant plants, is considered threatening by many. But only by addressing these issues, such as the alleged bias of land grant researchers towards products benefiting the input sector more than the farming sector, and allowing the

21. See Dan Looker, *New Ideas for the 1995 Farm Bill*, SUCCESSFUL FARMING Dec. 1993, at 16.

public, as consumers of the food, to participate in the debate can we resolve the proper role of technology in agriculture.

I. INDUSTRIALIZING THE FARM

American agriculture was built on the framework of the family farm. This organization provided the economic incentives which settled the fertile lands and made them productive. The family farm helped build the infrastructure of our nation both in terms of economic productivity and demand, but also our social structure and rural institutions. While much of the nation is no longer dependent on local agricultural production, the ideal of the family farm remains a reality in many areas, especially in Iowa and the upper midwest. Even where the family farm may have declined it still serves as a national symbol for the independence and productivity of American agriculture. Farm organizations use the symbol to promote their goals to the public and the companies marketing inputs to farmers and food to consumer rely heavily on the ideal. Much of the federal and state law concerning agriculture is based on promotion of a family farm structure. But at the same time we profess this attachment and respect for the family farm as an institution, a variety of economic and social forces are speeding its demise. Livestock production in the United States, especially of swine, is undergoing a rapid transformation from independent producers to large scale vertically integrated production, similar to what happened to poultry production thirty years ago. In recent years there has been an upsurge in the use of production contracts in grain crops, the traditional province of open marketed commodities.²² These forces, collectively referred to as the industrialization of agriculture, may present the most serious threat yet to the independence of American farmers. There may be economic reasons to consider vertical integration, especially if you are an integrator, and production contracts can be written so they truly share risks with farmers rather than shift risks to them. But the real question is does anyone care about these rapid changes in the structure of agriculture and how it may be changing not just who farms the land but how it is farmed?

As noted above, in 1980 the USDA conducted a major study on the structure of agriculture called *A Time to Choose*, but the change in administrations made talking about the structure of agriculture politically incorrect. For the most part issues of structure are still considered passé

22. For a discussion of forces leading to increased use of contract production for grains and the potential legal issues raised by the development, see Neil D. Hamilton, *Why Own the Farm If You Can Own the Farmer (and the Crop)?: Contract Production and Intellectual Property Protections for Grain Crops*, forthcoming, 73 NEB. L. REV 48 (Summer 1994).

today. The irony is that as America continues to ignore issues concerning how agricultural production is organized, the world's other two largest producers, China and the states of the former Soviet Union, have adopted agricultural reforms to try and create a system of family farming based on the United States model, and are moving away from large scale, industrialized farms. The question to consider now is whether the structure of agriculture matters, and if it does how we can work to promote the structure we choose and desire for the United States farm economy.

J. FARMER COOPERATIVES - OBSOLETE OR FORCE OF THE FUTURE?

A traditional tool farmers have used through history when confronted with unfair conditions or unequal economic forces has been to attempt to organize for common action. The independence of farmers has meant the success of collective farmer organizations, as compared with labor unions, has been limited. Farmers have been much more successful though in using another form of organization--the cooperative. Cooperatives are based on the democratic ideal of one vote per member with membership limited to producers. Cooperatives operate on a non-profit basis meaning the earnings (profits for a corporation) are allocated to each member of the basis of how much business was done, called patronage. But only a portion of the patronage refunds are paid in cash, the remainder are invested in the cooperative so it can grow and improve its services. Cooperatives have played a significant role in helping farmers develop markets and obtain needed inputs and services. Cooperatives have experienced periods of growth, generally in response to unfavorable market forces created by the businesses with which they competed, such as the response to grain shippers in the last century.

The current trend toward industrialization raises the issue of whether cooperatives can again serve as a countervailing force to maintain opportunities for independent farmers. There are examples of new cooperatives being formed to do so, but there are also reasons for doubt about the viability of the cooperative ideal as an answer for farmers. During the last forty years much of the understanding among farmers of the value of cooperatives may have been lost to a new generation of farmers with no memory of the conditions under which their coops arose. This lack of awareness is reflected in declining patronage and lack of support for cooperative action. Equally troubling is a worrisome tendency on the part of some cooperatives to fail to distinguish between opportunities for their members and for themselves. The best example of this is the controversial decision by Farmland Industries, a large regional cooperative engaged in pork packing and feed sales to enter hog production as an integrated contractor in direct competition with its members who feed hogs. The coop's board claims

there is no conflict because it is creating markets for feed and supplies for the packing plants, but the decision seems far from the cooperative ideal. An alternative view of the appropriate role for cooperatives is reflected in the decision by Land O'Lakes to promote a program for independent pork production by its members as an alternative to contracting. These contrasting approaches illustrate the point that as agriculture struggles to deal with forces changing its traditional structure, the organizations which represent farmers, both cooperatives and commodity groups, will be forced to clarify their own role in the agricultural system. In so doing they must decide which is more important, maintaining a system of independent producers or promoting the interest of agribusiness.

K. USDA - DEPARTMENT OF WHAT?

During most of the history of American agriculture the USDA has been there to assist in the economic growth. Created in the 1860's to provide information and new seeds to farmers, the USDA has evolved into one of the largest government agencies, with over 120,000 employees administering a variety of programs. The USDA is a unique agency created more to promote and protect a segment of the economy than to regulate its conduct. This aspect of the USDA has often led critics, both in Congress and the public, to question its motives and ability to separate the economic interests of the agricultural sector from public goals. Concerns such as these led Congress in 1971 to remove regulation of pesticides from the USDA and give it to the newly created EPA. The work of the agency has changed over time as the number of farms have decreased and the productivity of agriculture has increased.²³ Political support for farm programs has narrowed, but control over food assistance programs and forestry, have helped USDA preserve the political support and budget necessary to exist. The issue of who the agency represents, the American public or the agricultural industry, was in the news again in the debates over food safety and government reorganization. For the last two years the agency has been focused, almost single-mindedly, on reorganization and reducing costs. The result has been reorganization of the agency and closure of some local offices.²⁴ But even these modest proposals met criticism and faced

23. The issue of the need of the USDA to change in order to address an evolving food and agriculture sector was the focus of GENERAL ACCOUNTING OFFICE, PUB. NO. T-RCED-93-32, REVITALIZING USDA: A CHALLENGE FOR THE 21ST CENTURY (1993) (reporting the testimony of Robert Robinson, Associate Director of Food and Agriculture Issues in the Resources, Community, and Economic Division of the U.S. General Accounting Office, to House committee on April 22, 1993).

24. See U.S. DEP'T AGRIC., TEAM USDA SUMMARY - REINVENTING GOVERNMENT:

opposition in Congress and the farm community. While the need to reduce administrative expenses is a problem it masks a more significant concern about the future of the USDA. The larger question may be the relevancy of the agency. While USDA has focused on which name to place on the door, it has been slow or unwilling to deal with issues such as environmental protection or farm program reform. As a result, control over the agenda of issues shaping agriculture has continued to be nibbled off by other agencies more than anxious to accept them. Whether it is food safety and the Administration's proposal to consolidate the responsibility within the Food and Drug Administration, environmental programs and the growing role of EPA in regulating farming, or the role of trade officials in shaping agricultural trade policy, the fact is control over food and agriculture policy is slipping away from the USDA. The truth is we need a USDA, but perhaps renamed to reflect the broader array of issues involved in agriculture. USDA has the history, the expertise, the farmer trust, and the local structure for administering national food and agricultural policies, whatever they may be. Preserving the importance of the agency by refocusing and broadening its mission to address issues such as increasing the share of the food dollar which stays with farmers, and rural economic development, are challenges we must face.

L. WHO SPEAKS FOR AGRICULTURE?

A recent study by some of the largest agribusiness companies warned that America's efficient production of food is being threatened by a wave of environmental and food-safety regulations.²⁵ But the study may reveal a more serious historic problem for American farmers - an agricultural policy influenced more by the interests of the businesses which trade with farmers, than by the concerns of farmers or societal goals. The study was conducted for the Agricultural Policy Working Group, comprised of such "farmers" as Cargill, Central Soya, IMC Fertilizer, Nabisco Brands and the Norfolk Southern Company. The study raised the specter that efficient food production in our country is threatened by policies designed to address such concerns as soil conservation, food safety, water quality protection, and farm worker safety. But the arguments seem somewhat specious. Far from threatening efficient food production, the policies listed are designed to promote a long-term sustainable farming system and achieve legitimate societal goals. How can an agricultural system which does not address these

THE NATIONAL PERFORMANCE REVIEW (1993).

25. See generally Bruce L. Gardner, *The Impacts of Environmental Protection and Food Safety Regulation on U.S. Agriculture*, (Agricultural Pol'y Working Group 1993).

issues be considered either efficient or productive in the long term? The key to achieving these objectives is not in damning them as inappropriate, but instead is in developing a policy which provides farmers with sufficient resources, either in the market place or through public cost sharing, to meet the challenges. The true costs of food production, both economic and social costs should be covered in the market. Much of our difficulty in achieving environmental stewardship has been an unwillingness or inability to account for the resource costs in the market. Isn't it fair to ask if society can afford to pay more for its food if that increase can find its way to farmers so they can cover any increased costs associated with performing the new tasks?

Perhaps the most serious danger in the study is the implicit conflict it tries to create between farmers and the public. What can be gained by perpetuating this false conflict? Agriculture can only profit by providing consumers--the public--with the goods and services society demands. Agriculture can profit whether these services are wholesome food or environmental protection, but only if farmers recognize the natural alliance between agriculture and consumers. But to do so farmers must also recognize the differences between their interests and those of the agricultural companies who depend on them for economic survival. Whether the issue is the level of production controls, the price of commodities, or the cost of inputs, there are natural tensions between farmers and agricultural businesses. While there is a commonality of interests on broader question, farmers can not let business speak for them or dominate the development of farm policy. To do so, as may now be happening on the issue of industrialization, leaves farmers at the economic mercy of the companies they support and separates farmers from their natural linkage with consumers and the public. The irony of the current situation over who will control farm policy was vividly portrayed by the recent food industry suit to block USDA from implementing labeling requirements to provide consumers with information about how to safely handle raw meat and poultry. Whose interest is served by this lawsuit? It is not that of the farmers who raise wholesome pork and beef and depend on consumer confidence to sell their product. Nor is it the public, which will add fears of contaminated meat to other arguments for reducing meat consumption. At a time when USDA is attempting to shed a perhaps well earned reputation of being more concerned with the industry it regulates than the public or the farmers it is designed to serve, the food industry files suit to delay new labels to inform consumers.

M. CAN THE AGRICULTURE WE ARE BUILDING YIELD THE HARVEST WE DESIRE?

The final contradiction in many ways encapsulates those already discussed. It is clear the public expects agriculture to perform many new

tasks - as environmental stewards; producers of safe, abundant, inexpensive food; preservers of rural culture; and engines of rural economic growth. In many ways these are the challenges the family farm and American agriculture has tried to meet in the past. What is new is the public is now more involved and specific in determining the content of how the tasks will be placed on agriculture. But at a time when it is clear we expect more of farmers the structure of agriculture and thus its ability to fulfill the public expectations is moving the other way. Farm numbers are declining, tenancy is increasing along with farm size, livestock production is increasingly concentrated in an industrialized structure, and agribusiness play a dominant role both in production and in shaping agriculture's policy responses. Food production has become increasingly specialized to the point when the traditional diversified family farmer with wide knowledge of different crops and farming systems is disappearing. The question then is whether we can develop a food and agriculture system which relies on the farmer to play a central role in meeting public goals or instead whether agricultural policy will in reality be industrial policy?

To answer this question one must consider the role law plays in shaping the food and agricultural policy issues reflected in these contradictions. By doing so, we can identify if any reasons for optimism do exist. It is my belief America can develop a sustainable food and agriculture policy which respects the farm, the land, consumers and agricultural companies. Considering how we can do so is the challenge to all involved in agriculture. To begin to understand the forces driving industrialization and how it relates to the concept of sustainability, it is important to first briefly consider the changes in the farm population in America.

III. DECLINING FARM NUMBERS AND STRUCTURAL ISSUES: WILL FARMING DISAPPEAR?

The 1990 Census data contained startling news for agriculture and agricultural lawyers; reflecting the body count of declining farm numbers inflicted by the farm financial crisis of the 1980's. For example, Iowa lost twenty-five percent of its farms, declining from 125,763 in 1980 to only 93,780 in 1990 who describe farming as their primary occupation. Only seven percent of Iowa's work force now farms, meaning there are more school teachers, health care workers, or business executives and managers in the state than farmers. The farm population in the Midwest declined even more rapidly than did farm numbers. In the 1980's, Iowa's farm population dropped by thirty-four percent with nearly 135,000 people leaving the countryside, with similar or steeper declines in Illinois, Minnesota, and Missouri. Today only nine percent of the Iowa population is classified as

agricultural while sixty-one percent is urban. The reports show a steeper decline in the number of young farmers, which combined with an aging farm population sets the stage for continuing and perhaps even steeper drops in farm numbers and more wrenching changes in rural communities.

The implications of changing demographics are clear - fewer farms, larger operations, and concentrated land ownership. If these trends continue society may face important legal challenges accompanying the trends, including:

1. Increased farm tenancy and separation of land ownership from management, which means an issue of historical legislative concern in connection with land stewardship may reassume greater significance in years ahead.
2. The need to create systems to link older and retiring landowners with young farmers who want a start in agriculture. Several midwestern states operate beginning farmer loan programs which have successfully financed a small crop of new farmers, but states are now looking at methods for more direct and aggressive linkages. In Nebraska, the innovative Center for Rural Affairs operates the Land Link program to connect older farm owners with those desiring to start farming, and Iowa has recently instituted a version of the program called "Farm On".
3. Continued division of American agriculture into two segments, large scale commercial farms producing most of our grain, meat and fiber and a larger sector of small and part-time farms supplying niche-markets for specialty crops, which will require laws sensitive to the differing needs of each.
4. A changing farm labor market has led to increased use of seasonal and migrant labor to perform functions, such as detasseling seed corn, traditionally performed by local youth. The use of seasonal and migrant labor brings with it the obligation to comply with the regimen of federal and state labor laws protecting workers. The application of these laws has already resulted in litigation in the Midwest, and creates a multitude of risks for any farm operation failing to comply.²⁶

26. The issues identified in these paragraphs were, in part, the focus of another recent article. See Neil D. Hamilton, *Feeding Our Future: Six Philosophical Issues Shaping Agri-*

The changing demographics of agriculture and the industrialization now underway are clearly linked. A major part of the linkage is the role of technology and how it is employed in farming. One direct result of increased industrialization and use of new technologies, such as genetic engineering, will be an ever smaller share of economic activity from agriculture being contributed by the farming sector. Stew Smith recently documented the decline of the economic contribution of farmers.²⁷ He observes that agriculture consists of three sectors: farming, the input sector, and the marketing sector. Each sector makes a contribution to the economic output of the collective food and agriculture economy, however, between 1910 and 1990 the share of agriculture contributed by the farm sector has dropped from twenty-one percent to five percent, with most of this shift being assumed by the input sector. He notes the historic explanation for why farm numbers were declining, i.e. farmers were getting more efficient and society didn't need them anymore, was in reality only half the truth. "The whole truth would have also stated that much activity, performed by existing farmers was being absorbed by non-farmers, primarily in the input supplying firms."²⁸ Smith's perspective is that much of the shift is the result of how technology is developed and employed in agriculture. He responds to the argument the land grant university ("LGU") research community has been biased toward larger farms, rather than being scale-neutral, by concluding both positions are wrong. His conclusion is most LGU research has been sector biased.

Most agricultural research leads to more non-farm activity at the expense of farming activity. This shift from farm to non-farm reduces returns to farmers to cover opportunity costs and requires farmers either to increase production or utilize their excess management and labor in non-farm pursuits. Indirectly the technology results in fewer and larger farms (in terms of commodity production) and more part time farms, but the direct cause is the sector bias.²⁹

Smith illustrates this analysis by contrasting the forces which have driven the development of a "high technology" input, the hormone BST, to increase dairy production and the lack of LGU research on a management

cultural Law, 72 NEB. L. REV. 210 (1993).

27. See Stew Smith, *Farming--It's Declining in the U.S.*, CHOICES, First Quarter 1992, at 8. See also George Anthon, *The Decline of Farming*, DES MOINES REG., May 10, 1992, at J1.

28. Smith, *supra* note 27, at 9.

29. *Id.*

based technology, intensive rotational grazing, which does not result in a marketable input but which could be just as effective at increasing productivity and farm profits. His conclusion is:

It is no mystery why that alternative research was not conducted. There was no private sector to contribute funds to public research or to conduct its own research. But if there is a societal objective to maintaining farming, farms, and farming communities, we should have devoted public research to that alternative research.³⁰

The implications from Smith's analysis are apparent and timely. The present agricultural system, from the research community to the input and marketing sectors, are all contributing directly to the loss of farm numbers. As such, their statements supporting continued inevitable movement toward industrialization, must be scrutinized, especially for their impact on both farmers and the public. While Smith notes it may seem ludicrous to suggest farming could cease to exist in our agricultural system, he concludes:

Without substantial alteration of an array of agriculture policies, particularly technology development, the eighty-year trend line of reduced farming activities will continue. Biotechnology being developed today with the support of the LGUs will lead to a more industrialized system, with most farming activity conducted by part-time farmers and non-farm firms performing much of the production activity away from the soil. Full time, family-owned and managed farming, as we have known it will cease to exist.³¹

IV. WHAT IS THE INDUSTRIALIZATION OF AGRICULTURE?

The best way to examine the changing structure of American agriculture is to consider more closely the question--what is the industrialization of agriculture? What do people mean when they speak of it? What features differentiate it from the agricultural structure which exists today? The answers to these questions are a mixed bag depending on who is asked. To some people the term implies larger farms, cheaper food, more contract production, raising identity preserved products, and increased use of science and technology such as biotechnology and genetic engineering. To others

30. *Id.* at 10.

31. *Id.*

it may bring to mind fewer farmers, more profitable farms, more corporate farming, better environmental protection, more branded food products, better educated consumers, more jobs in agriculture, and increased economic development in rural areas. Whether you consider the development good or bad, or a mixed blessing, depends on your attitude and understanding of agriculture.

Several scholars have tried to identify the forces leading to industrialization. Kristen Allen, identified three forces driving changes in the future shape of agriculture: (1) consumer demands, such as changes in tastes; (2) international events, including expansion of trade; and (3) technological advances.³² She argues the convergence of consumer demands and new technologies may stimulate major changes in agricultural production. This introduces one of the claimed advantages and reasons for industrialization, frequently cited by the agribusiness sector--the main reason for industrialization, in the form of contract production and vertical integration, is to enable integrators to give consumers uniformity and predictability in foods. Industrialization they argue is a process whereby the need for more capital in agriculture to access the new technologies can be met. By doing so, agriculture will be able to produce the specially designed products, such as branded meats or "identity preserved" grains, with specific attributes processors need to provide consumers what they want.

Allen cites the article by Urban as the fountainhead for the revelation agricultural industrialization is inevitable. Urban's article, *Agricultural Industrialization: It's Inevitable*, is the most well crystallized, and oft-cited, statement of the agricultural industry's view of the process of industrialization. Depending on one's perspective of agriculture and how one reads Urban's article, he is either its greatest promoter or leading apologist. In either case he deserves credit for helping bring the debate over industrialization of agriculture to the public. His company, Pioneer Hi-Bred International, Inc., the world's largest seed company, is also well positioned to benefit from industrialization. While not advocating the changes, Urban views the development optimistically, noting it will maximize uniformity and predictability in agricultural production allowing for branding of food and marketing of "identity preserved" products, a development his plant breeders are actively pursuing. He believes it will attract capital to agriculture and lead to more rapid adoption of new technologies. He is also optimistic it will create new opportunities--possibly giving rise to a new family farm - one that is "dependent as much on financial management skills and contract

32. Kristen Allen, *A View of Agriculture's Future Through a Wide-angle Lens*, CHOICES, Second Quarter 1993, at 34.

marketing as on production and agronomy know-how"--a "super farmer" who will respond quickly to new opportunities to increase income and reduce risk. It is this person who will be part of industrialized agriculture.

Urban's article is strangely silent however, about the effects of industrialization on land stewardship and the health of rural communities.

Urban defines industrialization as the integration of each step of food production system into an industrial model. This is not necessarily the same as corporate farming, as farmers will still be there, but now the farmer will be "integrated into the processing of what is produced." This integration will take place primarily through the use of production contracts by which processors and marketers can control and direct production. Urban cites as an example his own company's Better-Life Grains program, which uses contracts with farmers to raise grains without pesticides. The grains are then sold to processors of consumer products, such as cereals and dog food, who want to market a product using the Better-Life Grains label. Urban also cites development of "identity preserved" products or end use tailored varieties, which will be greatly accelerated by the promotion of biotechnology into crop production. Because of the unique characteristics of these specialty bred plants or the small markets for the products, the production will be marketed outside of existing marketing systems. Urban notes the same reason as Allen in answering why for these new marketing opportunities to happen it must be done in an industrialized system. He argues it is not possible for a farmer to manage and integrate all the steps in the production, processing, and marketing stages which are the keys to getting the uniformity and predictability that consumers--and processors--want. He claims personal health needs of consumers are driving the demands and to meet consumer demands you need the uniformity and predictability only an industrialized system can offer.

There are other suggestions why industrialization is happening. Urban indicates financing will play a major role in the development. Agricultural lenders are risk adverse and the experience of the 1980's with losses in traditional agricultural production loans to farmers have made bankers more likely to lend money primarily to larger industrialized ventures in which they have greater pay-back confidence. The existence of lower transaction costs with larger loans is another reason capital will prefer the manufacturing enterprise to the autonomous producer. One impact of access to capital is an industrialized agriculture may adopt new technologies quicker in part because it is more oriented to innovation and has the financing available to acquire the new technologies.

Of course the movement to an industrialized agriculture is not without critics who identify concerns about the economic and social health of family farms and rural communities, the stewardship of the land, and the effect on

the cost and quality of our food.³³ One important issue which society must confront concerning the reality of agricultural industrialization is whether it is good for either society or for farmers. Allen's analysis raises an interesting question concerning the process of industrialization, and that is, which structure of agriculture will be better able to produce the foods in which consumers have greater confidence, a traditional family farm or industrialized farming? A related question which follows from a discussion of the "inevitability" of industrialization is what form of agriculture will be in the best position to meet society's demands for "stewardship" resulting from the current wave of heightened environmental awareness?

Regardless of conflicting opinions, the signs of industrialization of American agriculture are all around. Consider these developments:

- the movement toward contract production of swine in the Midwest, led by the large integrators who dominate the poultry sector;³⁴
- continued trends towards larger, confined animal feeding facilities with operations shifting between states in search of lower environmental standards;³⁵
- the commercialization of biotechnology,³⁶ on the horizon for years but now coming true as products, such as Calgene's Flavr Savr tomato appear on the table;³⁷

33. See, e.g., George Anthan, *Is Industrialization Good for U.S. Agriculture?*, DES MOINES REG., Dec. 15, 1991, at 2C (comparing Urban's talk with Wendell Berry's article).

34. For example, in August 1989 the Des Moines Register ran a series on whether Iowa would be able to maintain its dominance in the hog industry in light of competition by vertically integrated packers and large contractors. See, e.g., Dan Looker, *Hogging the Market: Iowa Reign as Pork King Threatened*, DES MOINES REG., Aug. 13, 1989, at 1A.

35. See, e.g., Steve Marberry, *By Moving Hog Operations to Oklahoma, Tyson Finds Welcome*, FEEDSTUFFS, June 29, 1992, at 9.

36. The Administration recently took a major policy step to accelerate the movement of genetically engineered foods to the market when the Food and Drug Administration proposed new rules to allow their sale without government testing, except in limited circumstances. See 57 Fed. Reg. 22,984 (proposed May 29, 1992). See also *FDA Issues Biotech Policy; Consumer Groups Decry Labeling, Testing Shortfalls*, NUTRITION WEEK, May 29, 1992, at 1; *Genetically Altered Food Moving Closer to U.S. Grocery Shelves*, DES MOINES REG., May 27, 1992, at 3A.

37. See Pamela Weintraub, *The Coming of the High-Tech Harvest*, AUDUBON, July-Aug. 1992, at 92. For a recent article discussing the role intellectual property right protections may have on shaping agriculture, see Neil D. Hamilton, *Who Owns Dinner: Evolving Legal Mechanisms for Ownership of Plant Genetic Resources*, 28 TULSA L.J. 287 (1993).

- increased efforts to develop markets and technology for producing "industrial" crops to create new uses for agricultural production;³⁸ and
- increased concentration in the food processing industry with vertical integration into crop production through contracting by food processors and marketers.³⁹

Each of these trends raises fundamental legal issues which will challenge both the farming community and society.

A contrasting view of the value and effect of industrialization of agriculture comes from Wendell Berry. In his article, *Living With The Land*, Berry shares his perspective of our relation with the land and how there are basic rules we must recognize in our agricultural and environmental policies.⁴⁰ His premise is our failure to observe these rules is the reason for the lack of land stewardship in our country. He notes our record of ill treatment of land and the impact it has on local communities, using as an example his home area near Port Royal, Kentucky. Berry concludes we treat rural agricultural areas like colonies, an attitude reflected in the abuse and exploitation of natural resources, primarily by non-residents, and increasingly international corporate economic interests. He believes the work of the industrialists is now almost complete in the United States, and is being projected onto a world stage. Their goal is to bring every acre of land and every worker under corporate control. Berry believes in this process the voices of rural interests and for protecting the land have not been heard in the centers of wealth, power and knowledge, or have been portrayed as Snuffy Smith and L'il Abner. All of this has two main effects, first, people are estranged from native wealth, health, knowledge and pleasure of their country, and second, the country itself is being destroyed. He poses the question--is there reason for hope or will we go on with our destruction? He recognizes that we do still have some reason for optimism, there is health with the land and there are examples of stewardship. But he

38. See, e.g., Don Muhm, *Finding New Uses for Iowa's Surplus Crops*, DES MOINES REG., May 13, 1992, at 8S (discussing a hearing in Cedar Rapids, Iowa by the USDA's Alternative Agriculture Research and Commercialization Board); Don Muhm, *Project to Focus on Special Crops*, DES MOINES REG., May 17, 1992, at J1 (discussing a project by Iowa cooperatives to market specialty grains raised by members).

39. For a more detailed discussion of these issues see generally, Hamilton, *supra* note 22.

40. Wendell Berry, *Living With the Land*, J. SOIL WATER CONSERVATION Nov.- Dec. 1991, at 390.

argues we must follow the example of nature and keep the scale of our economic organization small enough to think reasonably. In stark contrast to the voices who argue agriculture must be industrialized, he notes we have to change our attitudes:

We must see that the standardless aims of industrial communism and industrial capitalism have failed. The aim of productivity, profitability, efficiency, limitless growth, limitless wealth, limitless power, limitless mechanization and automation can enrich and power the few (for awhile), but they will sooner or later ruin us all. The gross national product and the corporate bottom line are utterly meaningless as measures of prosperity or health of the country.⁴¹

In order to change, Berry believes we must recognize our natural limits and learn to grow like a tree not a fire, not exceeding our limits. He argues we must give up "our superstitious conviction that we can contrive technological solutions to all our problems," noting for example how continuing soil loss embarrasses our technological pretensions. Finally, he argues we must integrate social standards into our aims of production, economic growth, and profit, so that other aims, for example, freedom and pleasure are considered. The key standard Berry is speaking of is the health of the human culture, which is linked to preserving the health of nature. To talk about health requires us to talk about community, in its largest sense. Which brings us to what he sees as the key question--what must be the economy of a healthy community based on agriculture? He concludes it can't be the current colonial approach which exports raw materials and imports the necessities. He observes that "[t]o be healthy, land-based communities will need to add value to local products; and they will need to supply local demand, and they will need to be reasonably self-sufficient in food, energy, pleasure and other needs."⁴² In other words Berry is talking about a sustainable agriculture.

It is patently obvious the industrialized model of agriculture, envisioned by Urban and others does not even begin to consider the issues of health and community seen as important by Berry. This contrast in views and what they reflect as being significant values presents the issue for society concerning industrialization. Do we care what shape or structure agriculture assumes, do we see a linkage between health of rural communities and

41. *Id.* at 392.

42. *Id.* at 393.

health of the land and our food? Or is all we care about the price of our food and we assume the land will be cared for and the rural society will exist regardless of how agriculture is structured or who controls the land? The current debate over the industrialization of agriculture, is vividly portrayed in the views of Urban and Berry, and raises a number of pivotal questions for our nation, including the independence of farmers.

V. IS THERE AN AGRICULTURAL CANON?

Is there an agricultural canon--a body of beliefs or assumptions which define farming in our cultural and social context? I believe there is and it contains such features as:

- farmers are independent--they can't be fired and don't work for someone else;
- farmers own their own property or intend to some day, and thus have a long-term stewardship relation with the land, different than employees;
- farmers sell their goods on the free market and profit from their marketing skills and pricing opportunities;
- farmers may join many organizations but they retain control over production and marketing decisions, unlike union members;
- farmers are largely free from government regulation as to production and marketing decisions; and
- farmer-owned cooperatives provide a means for farmers to collectively obtain inputs or access markets.

If we have such a canon, it strikes me our changing agricultural structure means we are now moving away from this view of farming. If there was a historic progression in agriculture it was that a person not born to farming or wealthy enough to buy land, would begin as "hired man" or laborer. Then with savings the worker would become a tenant, building equity to one day own a farm. Once the farm was purchased, and the mortgage paid, often with the assistance of labor intensive production such as hogs, known affectionately as "mortgage lifters," the farm family might expand their "owner occupied" farm. The opportunity to own their own land and be their own boss was the ideal which attracted and motivated millions of farm families throughout our nation's history.

Consider how in recent years we have begun to replace or deconstruct this traditional progression of farm structure. First came the "lesson" of the farm crisis which taught it is not wise to own all of the land you farm, instead the wise farmer will use leases to leverage their equity in equipment

and let other investors carry the risk of land ownership. Many factors have now resulted in increasing levels of tenancy in American agriculture approaching those of the Depression years, when tenancy rates were considered a grave national concern. Now comes the onset of "industrialization" and the movement of food processors and input suppliers into food production, often through use of contract production. While the merits of industrialization are praised by some in agriculture, it promises to take much of agriculture one step further back down the progression. Contract production of livestock can turn farmers into low-paid, piece-work employees on their own land, in everything but name.⁴³ Depending on the method used, contract production of grain may offer landowners and farmers the opportunity to become "sharecroppers" on their own land, with limited control over either production or marketing, and little opportunity to profit from rising markets.⁴⁴

Bill Haws, CEO of National Farms, Inc., one of the nation's largest and most successful corporate farms, views the development of contract production of livestock and increased vertical integration with anticipation and promise. He characterizes the history of broiler production, where roughly 100 producers now raise most of the chickens in the United States, as the model for the future of the pork and beef sectors. He believes such an integrated production system will offer consumers lower priced, efficiently produced foods of uniform quality. The shifts in production are even billed by some in the Midwest as a form of economic development because of the jobs it may create. But what of the impact it has on existing independent producers? Do we as a nation really want to trade a diverse system of independent family owned farms for the opportunity to turn farmers into employees of food marketing conglomerates, just so we can buy a more uniform porkchop for perhaps a few pennies less a pound? But that is what the explanations for industrialization pretty much boil down--lower cost, more uniform and predictable food. There is little claim farmers will be better off, or the land will be better treated, or rural communities will be healthier, or even that the food will be better quality or more nutritious--it will just be cheaper.

43. For a discussion of the impact of contracts on poultry production, see generally Clay Fulcher, *Vertical Integration in the Poultry Industry: The Contractual Relationship*, AGRIC. L. UPDATE, 1992, at 4. For another excellent source of information on developments with litigation involving poultry production contracts contact the Poultry Growers News, which is published by the National Contract Poultry Growers Association, P.O. Box 824, Ruston, LA 71273.

44. See generally Hamilton, *supra* note 22.

One of the more ironic justifications offered for industrialization is the idea it is merely a response to consumer demands. The explanation is usually that "discriminating consumers" are demanding more uniformity and predictability in their processed food products and thus the processing and supply industry must vertically integrate into production to supply this demand. This explanation is widely used to explain and justify current changes in the pork industry but it is also applied to other sectors. While it has a facial appearance of reasonableness, as seen in the unquestioned acceptance by many agricultural economists, several reasons suggest the explanation is more an after-the-fact rationalization than an accurate causal description.

First, it is true consumer tastes may determine which foods are in demand, but it is questionable that consumer demands are a driving force in promoting shifts in the structure of food production systems. If consumers want lean pork, farmers can produce it without doing so under contract to packers. Consumer purchases follow the products processors or marketers offer for sale. While there may be a market for branded pork products, are we to believe processors were forced against their will to offer branded meats in response to demands by consumers for such higher priced products? The more likely and obvious justification is processors identified branded products as one more way to increase market share and increase profits. If consumers are offered branded meat will they buy it? Probably, especially when encouraged with a "farm raised" ad campaign. But to argue the product was offered, and farm production restructured, because of demands by "discriminating consumers" is to be disingenuous about the methods of modern food marketing and the interests of consumers.

Second, most consumers do not know how the food they buy is produced or by who, but it is reasonable to suggest if given a choice between foods produced by an independent family farmer or by employees of large conglomerates, most consumers would side with the farmer. If we took a survey it might even indicate if consumers had this information they would be willing to pay more for the food. Consumer preference for "farm produced food" is why integrated corporate food producers continue to make heavy reliance both of labels touting "farm produced" and traditional rural images in the ad campaigns, regardless of the truth of such claims. The reality may be we are rapidly converting farmers into low wage employees on their own land, but the images in food commercials will never tell this story.

The willingness of the agricultural industry to hide behind a justification of "consumers are making us do it" allows the sector to mask the true reason why processors and suppliers are rapidly moving into food production. The truth is they have determined integrating into production is a ripe

area for additional profits. The opportunity for profits is especially attractive when integration can be done in ways which limit the risk of loss, as is the case in most forms of agricultural industrialization. In poultry and swine contract production, integrators are able to shift more than half of the investment in the system--the cost of buildings and land--onto producers. The use of short term contracts allow contractors to decrease or end production in the face of declining prices but the producers remain responsible for paying the costs of production facilities--the notes and mortgages on the buildings. Contracts typically place the risks of mortality and environmental compliance on producers, and many contracts use a pricing and payment mechanism producers find impossible to decipher. The situation is little different in contract grain production where integrators allow the producer or landowner to carry the fixed costs of production, in land and equipment, and absorb the risk of crop losses through weather or disease. The integrator gets a guaranteed supply with the opportunity to profit from market price increases and from the "added values," which are of unrevealed magnitude because the contract premiums are not based on publicly discovered prices. The quality terms of the contract generally provide integrators a way to refuse excess production in the face of a large crop or adverse prices. In other words, the opportunities for increased profits from food production are especially real when you don't have to own the farm but instead can own the farmer.

But if industrialization does occur will consumers even know such a change has happened, or will they even care? There will still be people doing the hard work which is agriculture--driving the tractors, farrowing the sows, harvesting the grain. The change may in fact be unnoticed by most people, except those who will ultimately feel the consequences--farmers and rural communities. But if this structural change does happen, there is one important question we will need to ask--do we still call the people who do the work farmers? When I asked Mr. Haw at the American Bankers Association Agricultural Bankers conference in Dallas in November 1993, if the people who tend their corporate sows are "farmers," he answered without hesitation "of course they are." But one wonders if the workers were asked the question whether they would answer the same way. Do tellers in the bank fool themselves into believing they are the "bankers"? Do they make the decisions and profit from the bank's success? Do the farm workers driving tractors on Mississippi cotton plantations believe they are the "farmers"? Of course not. An employee knows all too well what makes the difference between who is the boss and who is the employee.

There are three good questions to ask yourself if you are confused on the issue. Does someone else sign your paycheck, does someone else tell you what work to do, and can you be fired? In some ways these three

questions have been a historic test of farming. Traditionally American farmers could answer all three with a loud no. They didn't get pay checks--they sold the crops they raised when and to who they wanted; they were their own bosses, determining what and when to plant; and they couldn't be fired, except by bad weather and low prices. American farmers should be asking themselves these questions today as they consider how industrialization may effect them.

But does it really matter to society whether the people who do the work in agriculture are farmers in the traditional sense, or instead are employees of industrialized agriculture? I believe there are many reasons why it matters, both to farmers and to society. The status of food producers as either farmers or workers influences many aspects of food and agricultural policy. The impacts can be seen in a variety of questions and implications a changing structure of agriculture will have for society, including on the question of whether we are building a sustainable food and agricultural system.

One important question is who we will need to address as the decision makers for agriculture on matters such as environmental protection or adoption of new technologies. If the real decision makers are the corporate integrators then why bother trying to educate "farmers" about the need for environmental protection or spend public cost sharing to induce their compliance? It will be easier to just deal with the handful of companies really controlling the decisions on the land. At this point a second question may become easier to answer, what methods should be used for achieving our desired environmental goals? Consider the issue of water quality protection. Rather than fund a program of cooperative education and economic incentives designed for a diverse system of farmers, industrial agriculture can be more easily and effectively regulated using uniform mandates. The regulations can be implemented as a cost of doing business and the costs passed on to consumers in higher prices. While corporate integrators will no doubt continue to use the image of the "family farmer is the best steward" to limit such approaches, society should be willing to test the reality of the production system integrators develop. A third important question for society will be how to justify various economic programs related to agriculture. Whether the issue is continuing federal farm programs, eligibility for property tax exemptions such as homestead credits, disaster assistance, or claims to special estate tax valuations, the need for or purpose of such programs may disappear if independent family farmers no longer exist. Why should society worry about assisting farmers in passing the operation on to the next generation, if this generation has voluntarily waived their franchise on independence? A fourth factor relating to why the distinction between "farmer" and "employee" is important concerns the self

image of producers, or how they see themselves. Will farmers consider themselves stewards of the land working for the good of society, striving to build an economically and environmentally sustainable operation to pass to their children? Or will they come to recognize they have become employees, or even less, in a system where the promise of profits and risk sharing has become a reality of risk shifting and servitude. Americans, especially we in the Midwest must ask ourselves if we are building a concentrated system of landownership and economic control over agriculture not unlike that faced and fled by our ancestors in lands far in time and memory.

If the reality of industrialization is to yield an "agriculture without farmers" society must recognize how it will change the very nature of the laws and programs which become priorities to those who work in agriculture. Rather than the key issues being new export markets and the level of cash prices or government supports, the driving concerns for the new class of farm workers will be what is in their employee benefit package and whether "sitting up with the corporate sow" will include pension benefits and health care. A final impact of this changing structure relates to who will benefit from the future opportunities in agriculture. The emergence of biotechnology and its promise of increased productivity, new and expanding export markets for high value products such as pork, and the continuing need to provide for a burgeoning world population are all factors which should create optimism for the future economic opportunities in agricultural production. This potential is not lost on the processors and suppliers who are rapidly integrating into food production, in fact it helps explain their actions. But at a time when the promise of agriculture profits may become most real, will there be any "farmers" left to take advantage of the opportunities?

Can the reality of industrialization be so bad and if it is, why would farmers voluntarily lose grip of their futures and freely give up their vaunted independence? The first answer of course must be it is too early to tell whether producers will in fact trade their role as "farmers" for that of corporate employee. If it does happen, as trends indicate it could, there will be several likely explanations. First, farmers may not recognize it as such.

They trust the companies with which they deal and are sure they will be treated fairly in new production and marketing arrangements. Second, perhaps some farmers don't want independence, especially if the reality of it is low returns and the opportunity to work hard and live in debt. You can't pay the bills with independence, especially if society and consumers won't support farmers in the market place. Third, some producers might not have any alternative from a financial standpoint but to look for economic linkages with integrators.

Perhaps the most significant reason why structural change is reshaping agriculture and reducing the independence of farmers is because we are not working hard enough to provide alternative opportunities to allow farmers to seek profits and remain independent. This should be the role of the land grant universities, of the farm organizations, of the cooperatives, and of government. Unfortunately in many ways the institutions to which farmers should be able to turn for assistance are, with few exceptions, willing participants in the industrial restructuring of agriculture. The agricultural business sector does not need public assistance in devising ways to maximize its profits or lower the portion of agricultural spending retained by farmers, it is very successful at that. But farmers do need assistance in opening new markets, reducing production costs, and increasing the share of the food dollar retained on the farm, if they are to maintain their economic independence and future. This is where our university research efforts should be aimed, and why farm programs and market innovations should be designed. If we fail to do so, there will undoubtedly be a future for agriculture but it could well be a future without farmers, at least as we have known them for most of our nation's history.

VI. THE RELATION BETWEEN SUSTAINABILITY AND THE STRUCTURE OF AGRICULTURE

The promotion of the concept of "sustainable agriculture" has been one of the central policy and scientific developments of recent years. Much of the attention to sustainability has focused on defining the term and on scientific research to reduce use of purchased inputs, such as pesticides and fertilizers, in an effort to protect environmental quality and increase farm returns. While most of the work in sustainable agriculture has been agronomic, it is important to recognize the important linkage between the economic structure of agriculture and the development of a sustainable agricultural system. For an agricultural production system to be sustainable it can not just deal with soil and water or price and income, but the system must also consider the farmers, their families, and the rural communities which make up the cultural structure of an agrarian system. If an agricultural system is to thrive there have to be people in the equation because the people are the actors to whom the knowledge and advice of the research community is directed. It is the farmers and their families who care about preserving the quality of the land they farm and building an economically viable operation, through which to accumulate wealth and acquire the resources with which to live. It is the people in an agricultural system who act as the transfer agents for knowledge and wisdom across generations. For

these reasons most definitions of "sustainable agriculture" include references to either people or the social structure of agriculture.

The definition of "sustainable agriculture" in the law creating Iowa's Leopold Center for Sustainable Agriculture, is "the appropriate use of crop and livestock systems and agricultural inputs supporting those activities which maintain economic and social viability while preserving the high productivity and quality of Iowa's land."⁴⁵ The references to "social viability" and "appropriate use" are both clear mandates to include a structural component in discussions of sustainability. However, for a number of reasons, University and public research efforts concerning sustainability have found it difficult to address the structural component.

Perhaps the most significant obstacle to including questions of structure and social policy in sustainable agriculture research is that it is impossible to address the issue without immediately encountering difficult "political" issues which are very controversial in the agricultural community. If the public is going to fund research on swine nutrition, improved animal waste handling, and new lower cost building design, isn't it also reasonable to address questions concerning the rapid structural change going on in swine production? If we don't, might we not wake up to find we have developed some lovely research on how to raise hogs but now the hogs are owned by vertically integrated food conglomerates rather than a traditional structure of independent producers. But to address structural issues in swine production would require considering topics such as: the value of anti-corporate farming laws, fairness of contract production terms, restrictions on packer feeding of swine, and the access to and legality of packer premiums for larger marketers. But these issues are politically controversial, not just to farm groups, state politicians, and University leaders, but also to the large

45. IOWA CODE § 266.39 (1993). It is fitting that the Center is named after Aldo Leopold, not just for his concern about the environment but also because of his concern about the structure of agriculture. In a 1945 essay, Leopold made the following observation about the coming industrialization of agriculture:

It was inevitable and no doubt desirable that the tremendous momentum of industrialization should have spread to farm life. It is clear to me, however, that it has overshot the mark, in the sense that it is generating new insecurities, economic and ecological, in place of those it was meant to abolish. In its extreme form, it is humanly desolate and economically unstable. These extremes will some day die of their own too-much, not because they are bad for wildlife, but because they are bad for farmers.

Aldo Leopold, *The Outlook for Farm Wildlife*, Address Before the Tenth North American Wildlife Conference (1945). For a discussion of Leopold's views and how they relate to the current development of sustainable agriculture, see Charles Benbrook, *Protecting Iowa's Common Wealth*, in *FARMING SYSTEMS FOR IOWA: SEEKING ALTERNATIVES*, 7 (1990) (Leopold Center for Sustainable Agriculture, 1990 Conference Proceedings).

agribusinesses promoting industrialization which patronize the university research community. As a result, there is little attraction or reward for researchers to embrace such topics and little research is done on social and structural questions. This helps explain why land grant universities have not been major players in joining the debate about the future of farming. It is much easier to research how a new soil test might work or whether an alternative pest control practice is effective than it is to determine whether there is a maximum "appropriate" size to farrowing operations. The production issues deal with observable and quantifiable "scientific" facts, while the issue of what is "appropriate" does not have a definite answer but instead must be grounded on a set of beliefs about what structure of agriculture is the best for the land and people. In addition, the scientific questions are directed at production enhancement, the traditional objective of almost all agricultural research in our nation's history, while consideration of issues of "social viability" may not find an answer through econometric modeling of production efficiency or the other current fancies of today's agricultural researcher.

A related obstacle to social and structural research in agriculture is that of the academic disciplines found in agricultural colleges few seem anxious to address such questions. Agricultural economists would be the most likely prospect, but their traditional attachment to "monetary" issues of prices, cost of production, profits, and efficiency, leave most unwilling, either by sentiment or attitude, to address issues of social value or the "appropriate" structure of agriculture. There are exceptions of course, including the work of Professor Harold Breimyer at the University of Missouri who devoted a lifetime to building and protecting a family farming structure in the United States, and the current work of Dr. Mike Duffy at Iowa State University in addressing changes in the swine industry. But as a rule, agricultural economists appear to have difficulty addressing such questions. The same is true for issues of environmental protection and natural resource value, as reflected by the limited role of the discipline in shaping or influencing the environmental laws and policies created for agriculture. While one would hope agricultural researchers could more effectively deal with an issue which may determine if farmers continue to even exist, at least as we now know them, there is ample reason for concern. The second most likely discipline for addressing structural questions would be rural sociologists, but in recent decades this discipline has decreased in numbers and waned in influence along with the historic decline in farm numbers. Unfortunately, at a time when we need them most, on many campuses rural sociology departments now deal more in history than policy and have limited prestige. But this does not mean all is lost at the land grant universities. Recent efforts to promote sustainable agriculture have meant with a warm reception

by many in the agricultural research community, as demonstrated by the broad research agendas of the interdisciplinary issue teams developed by the Leopold Center. The challenge now is to see that issues of structural change and social policy are recognized, accepted and embraced as part of the research agenda.

VII. WHAT WE SHOULD DO TO CONFRONT STRUCTURAL CHANGE IN AGRICULTURE?

As discussed above, the changing structure of agriculture is the subject of growing attention and discussion in farm policy circles. The developments are being met with a mixture of reactions ranging from advocacy and unquestioned acceptance, to doubt and resistance. Peoples' reactions are largely influenced by their location on the food production chain and their understanding or perception of the effect of the changes. As a result, whether the coming industrialization of agriculture is good or bad, depends on who is asked. This essay has identified several explanations for why the development raises legitimate concerns for both society and the farm sector.

From this analysis it is necessary to ask the next question - what should we do to confront structural change toward industrialization in agricultural production. The answer to this question may be uncertain, but here are several obvious suggestions.

First, as a nation we need to reignite the debate over industrialization, so we can recognize the trend and its implications. Secretary Bergland tried to do so in the late 1970's but with only limited success. Perhaps it is time once more, if it is not already too late, for the nation to have a thorough discussion about what we want from agriculture and how the farming sector needs to be structured to best deliver what society wants.

Second, as part of the review of industrialization it may become apparent that some of the economic relations being created need to be regulated, such as the use of contract production in the livestock sector. Undoubtedly agriculture will continue to change and evolve, but society, farmers, and the rural sector do not need to lay supine, accepting industrialization regardless of the form, as inevitable. While some economic and social forces driving it may be irreversible, this does not mean the process can not be shaped or influenced by government policies, laws or economic actions.

Third, as part of the effort to shape and preserve the future of farming more attention must be given to developing alternative marketing and production structures which allow farmers to maintain their economic independence while prospering economically. This is not an idle or empty wish. There are a number of innovative mechanisms which can be

developed and tested. These include developing composition based grain marketing systems which allow farmers to produce value added crops and market them at higher prices in the traditional public market place, thus giving them access to new crops and an alternative to contract production. A resurgence of interest in using and forming farmer cooperatives could provide a mechanism for producers to form economic linkages to develop opportunities for processing and marketing their production. Developing swine marketing networks which offer independent producers an alternative to vertical integration are another tool which may stem industrialization of production. In recent months there have been important developments in Iowa on all three of these issues which need to be encouraged.

Fourth, there already exist institutions in agriculture which should be ideally suited and anxious to carry the responsibility for finding innovative solutions to protecting the future of farmers. The land grant universities and the research and extension system were created partly for this purpose. They should be given the charge and responsibility for helping lead the effort. One would think the universities would recognize it is in their self interest to do so, because if farming ceases to exist as an independent activity but instead becomes only a component of manufacturing then much of the justification for the very existence of the agricultural research and extension system will have disappeared. If the land grant universities fail to assume this mission it will reveal their real worth for the farm sector and the true loyalties of their researchers and leaders.

Fifth, as part of the effort to develop an agricultural and food policy which preserves the independence of farming there will be opportunities to develop federal farm programs, such as price and income supports, and laws dealing with environmental protection, which reflect our commitment to a family farm structure. A review of the rhetoric contained in various agricultural laws, such as the periodic farm bills, shows we pay considerable lip service to maintaining an independent farming structure in the United States. Whether and how we confront the current trend toward industrialization will provide lawmakers and agricultural leaders with the opportunity to put their money where their mouths are and test the depth of our commitment to farming.

Finally, an essential part of the effort in joining a national debate about the future of farming will be to educate consumers about how our food is produced. This effort must include an explanation of why it matters under what form of economic organization agriculture happens. Only if the nation's consumers, who are the "public", come to realize the future of farming is in jeopardy will it be possible to actively shape the future of agriculture rather than passively watch it change. Only if consumers can be convinced our actions--what foods we buy and from whom--as well as the

farm policies we will support, are key elements in preserving a productive, sustainable, and most importantly, farmer owned and operated, agricultural system, will the future of agriculture include a role for farmers. If this effort does not occur, or if it fails, there will be an agriculture, but it may be one without farmers.

VIII. CONCLUSION: REASONS FOR OPTIMISM ABOUT THE FUTURE OF FARMING

The preceding discussion has identified a series of contradictions in American attitudes about agriculture and has discussed the potential threat to the future of farming in the shape of the coming industrialization. But it has also discussed the movement toward the concept of sustainable agriculture and suggested a number of steps which can be taken to confront the changing structure of agriculture. My conclusion is that all is not lost. There are several developments in American agriculture which can be considered signs of optimism for the future of farming. How the matters discussed below are addressed by the public will help determine whether our agricultural and food policy future is one which is both sustainable and built on an agriculture performed by farmers.

A. SUSTAINABLE AGRICULTURE AS A UNIFYING THEME

The attention being given to "sustainable agriculture" may make the concept a powerful and unifying theme for developing food and agricultural policy. Focusing on sustainable agriculture can result in several shifts: it changes the focus and direction of the research agenda; if defined broadly, it places farmers and social issues at the center of the debate over the future direction of agriculture; it provides a basis for addressing environmental issues in a comprehensive fashion by promoting a land ethic approach to stewardship; and it considers the economic realities which underpin farm production and public support for agriculture.

B. SUCCESS OF CONSERVATION PLANNING AS A MODEL

The success of conservation planning is showing how an integrated planning based approach to the achievement of environmental goals and the delivery of farm program benefits can be more effective than undifferentiated voluntary programs. As a result conservation planning may serve as a valuable model for dealing with a number of other environmental issues affecting agriculture, including non-point source pollution, nutrient management, use of pesticides, and integrated farm management. Conservation planning may even lead to the development of a unitary comprehensive farm plan system, as recently recommended by the National Research

Council's Board on Agriculture.⁴⁶ Expanding use of conservation planning will help insure the effectiveness and efficiency of programs offering public assistance to farmers for addressing environmental management responsibilities.

C. CREATION OF NEW FARMER ORGANIZATIONS

In recent years a new species of farm organization has begun to appear, not based on political ideology, such as the American Farm Bureau Federation, or the crop produced, such as the National Corn Growers Association. Instead, these organizations are centered around farmers commitment to a certain approach to farming. This trend is best reflected in the development of state based farm groups organized around the idea of sustainable agriculture, such as the Practical Farmers of Iowa ("PFI") and the Nebraska Sustainable Agriculture Association. These groups are a refreshing development in agriculture because they organize like minded farmers who are committed to stewardship and preserving the economic viability of what most would agree is a traditional family farming structure. The organizations are playing an important role in educating a broader section of agriculture by providing on-farm demonstrations of sustainable farming methods. The organizations are providing new leadership and spokespersons for agriculture, free of the ideological taint of existing farm groups or the necessary monocrop tunnel vision of commodity groups. An equally important development in new farm organizations is the rapid growth and success of the National Contract Poultry Growers Association ("NCPGA"), created to obtain equality of bargaining strength for disenfranchised contract producers and to fight to preserve their economic existence. As contract production increases in other areas, such as swine, it will be interesting to see if similar organizations are created. The existing producer groups will face possibly insurmountable hurdles in trying to represent all producers, large vertically integrated growers as well as small independent producers. The internal struggle over control and policies of grower organizations is already being experienced in livestock organizations such as the National Pork Producers Council.

D. POTENTIAL FOR RE-EMERGENCE OF COOPERATIVES

As the structure of agricultural production changes economic forces facing producers may direct them towards larger operations and new marketing systems. Producers will be faced with several options, including:

46. See generally NATIONAL RESEARCH COUNCIL, SOIL AND WATER QUALITY: AN AGENDA FOR AGRICULTURE (1993).

leaving agriculture, entering contract linkages with existing agricultural marketers, and expanding the scale of operations. The developments are also resulting in a new generation of producers considering use of collective or cooperative action with other producers to access the economic resources they believe are necessary to compete. Such efforts are seen in the recent construction of a \$12,000,000 pasta plant by a newly formed cooperative of North Dakota durum wheat growers and the promotion of specialty and high-value crop production by a new farmer marketing cooperative in Benton County, Iowa. In Iowa over thirty cooperatives have formed the Heart of Iowa program to market member produced high-value crops for a premium. Throughout the Midwest pork producers are forming feeder pig cooperatives to build jointly owned farrowing operations and many are forming marketing networks to obtain price premiums from packers. Farmer experiences throughout the Midwest may help generate a new era of cooperative efforts by producers who recognize there are profits to be made in agriculture, but who understand profits will go to farmers only if producers maintain their existence and organize with other farmers to obtain access to markets.

E. CONSUMER INTEREST IN MARKETS WILL OPEN NEW MARKETS

American society's fascination with food is reflected in a myriad of ways from the expansion of gourmet coffee shops to the proliferation of diversity in the fruit and vegetable sections of any local grocery store. Now there is even a cable TV channel devoted to food and related topics. This attention to food and related concerns of variety, quality and healthfulness should translate into increased opportunities for farmers, but only if farmers seize the opportunities. Whether it is production of "natural beef" as pioneered by the Coleman family in Colorado, the rapid expansion of farmers markets throughout the nation, or the growth of community-supported farms in which consumers buy shares of annual production, there will be ways for farmers to profit from society's growing interest in what we eat. The key determinant will be if two steps are achieved; first, educating consumers that the quality of their food is directly related to how it was produced and by who, not by which company processed or marketed it; and second, making consumers understand their food purchasing and consumption decisions have a direct role in determining the economic structure of farm production. As the relative price of food continues to decline as a portion of disposable income, the price of food will become a less significant factor for an increasing share of consumers. This means there will be increased profit opportunities for farmers who can maintain control over their food through various forms of direct marketing. All it takes is a consideration of the average farm share of a food dollar to

recognize that if farmers are to obtain increased income they must integrate upward into processing and marketing. The converse of this is reflected in the efforts of food processors to continue to integrate downward into actual production to exact the last portion of food producing profit. The struggle between farmers and processors over the "point of exchange" between them is the essence of the fight over the structure of farm production.

F. CHANGES IN LIVESTOCK PRODUCTION MAY GALVANIZE PUBLIC CONCERNS

Before there can be any significant change in the legal or political climate relating to the structure of food production it will be necessary for the public and farmers to become engaged in the issue. Congress, state legislatures, and government officials either have more important issues to address or are too indifferent about the future of agriculture to expect them to make structure an issue. If the public does not come to perceive the future of farming as important, then in all likelihood the changes now underway will continue unabated, perhaps even accelerating as the demographics of farm population complement the shift to industrialization. But several issues may shape public and farm attitudes about agriculture's structure. Food safety and quality have in recent years been hot topics for the public, but for a variety of contradictory reasons farmers and the public have often ended up on opposite sides. An issue just emerging in the midwest may serve as a topic on which consumers and farmers can find common ground and merge their concerns, i.e. the rapidly changing structure of swine production into giant vertically integrated pork factories. For swine production to go the way of broilers, where almost all the chickens produced in the United States are owned by one hundred companies, as predicted by Mr. Haw, should be a frightening prospect to anyone who cares either about the economic health of the several hundred thousand producers now raising pigs or the rural communities which depend on the income and profits from swine production. This list should include pork producers, farm organizations, rural bankers and lawyers, church and school leaders, and anyone else directly affected by the number and profitability of farms in a local area. But the concern shouldn't stop there, because the concentration of swine production also creates the potential for significant environmental problems of waste disposal, odor control and water quality protection. When you add in the economic impacts to traditional pork states as production moves to other areas, and the potential anti-trust concerns over concentration in pricing and marketing, there should be a wide audience of people and interests concerned about what is happening in the swine industry. Whether these potential concerns will emerge and gel into effective opposition to the shift in structure is yet to be seen. If it doesn't and pork production industrializes, going the way of broilers, it could well

be the final chapter in the story of independent traditional family farm structure in the United States.

G. PUBLIC ATTENTION TO ENVIRONMENTAL STEWARDSHIP CREATES OPPORTUNITY FOR FARMERS TO JUSTIFY THEIR WORTH.

The increased public concern over the impact of farming practices on the environment and the resulting increase in regulatory and voluntary programs to increase agricultural stewardship have been among the most important developments for farmers in recent years. Many farmers bemoan the increased attention to how they farm and complain about the cost and burden of new environmental protections. Some farm groups even foolishly and mistakenly have claimed the public has no right to regulate farming to require environmental protection because to do so "takes" private property.⁴⁷ But the reality may be the increased public concern for environmental protection is one of the best things which could ever happen to farmers. This may be true for several reasons. First, the public concern will give farmers the opportunity to prove they are the committed stewards they have always claimed to be. By showing their commitment to environmental stewardship, such as implementing conservation plans, restoring wetlands, and protecting water quality, farmers can validate their worth to society. By doing so they will address the negative impacts on the environment and thus avoid the more rigorous environmental laws applied to industry. More importantly, fulfilling the public's expectations for environmental protection will justify the existence and continuation of various economic programs and benefits which have been created for farmers. In the future the debate over farming will not be whether we can produce enough food - it is clear we can do so regardless of the structure of production we adopt. Instead the debate will be over how that food is produced. By acting now to demonstrate the key role independent family farmers, who have proven a dedication to stewardship, play in the sustainability of the system, farmers can help earn and preserve the public good will which is so important to their economic and political future.

H. OPPORTUNITIES TO DEVELOP NEW TOOLS AND MECHANISMS FOR FARMING

The current developments in agriculture insure that the farming system which emerges ten years from now may be very different from the one of ten years ago. The differences may be in the crops produced, the tillage

47. For a recent discussion of these issues, see generally Neil D. Hamilton, *The Value of Land: Seeking Property Rights Solutions to Public Environmental Concerns*, 48 J. SOIL WATER CONSERVATION 280 (1993).

system used, or the pricing and marketing mechanisms for selling the crop. As part of the debate over the structure of agriculture and the wisdom of agricultural industrialization, farmers and society will be faced with testing and considering a variety of new mechanisms to improve or preserve existing farming systems. The various improvements in crop nutrients and pest controls developed under sustainable agriculture research and the changes in tillage systems, such as the use of residue management resulting from adoption of conservation laws, are two examples. In addition, there are a number of other mechanisms and arrangements which will be tested to determine their suitability for farming. These include: (a) the promotion of composition based grain marketing to allow for the valuing of grains on their components, in a traditional public pricing and marketing system; (b) use of conservation easements to purchase long-term protection of important public environmental values while leaving the land in private ownership available for compatible economic uses; (c) expansion of the use of direct farmer-consumer marketing techniques such as farmer markets and community-supported farms; and (d) a renewed attention to diversification of production on family farms to increase economic returns and allocate risks. Consideration of these and other options will help expand the opportunities for research and innovation in agricultural systems and will continue the ingenuity which have been a hallmark of the American farmer, while at the same time developing the type of farming system most desirable for our nation.

I. RECOGNITION OF NEW THINKERS AND IDEAS FOR THE FUTURE OF AGRICULTURE

Given the tenuous position of the family farm structure and the current situation in agriculture, one is struck by the muffled silence of the debate. It raises the question of are there enough people who really care about where our agricultural system is headed? Where are and who are the Aldo Leopolds, Louis Bromfields, and Henry Wallaces of our time? Of course there are multitudes of people who are effected by where agriculture is going but the question should be what are we doing to shape where it is going. It appears that most farm leaders, public officials, and university researchers are caught up in the "presentism" of the farm situation and the movement toward industrialization. Rather than asking what do we want from agriculture and how can we shape it to provide those values, most people only see the agriculture of today and rationalize where it will go tomorrow as a projection of what they believe are irreversible economic forces. But the forces now shaping agriculture are not irreversible. Our history shows we can use law and public policy as well as the economic

actions of farmers and consumers to shape the future of farming.⁴⁸ Thankfully there are a number of individuals concerned about the future of agriculture, Wendell Berry, Paul Johnson, and Marty Strange being among those best known in the midwest. Optimism can be found in one recent trend which indicates concern over the future of our food and agricultural system is registering with the foundations and thought setters of the nation. Consider that in recent years four different individuals working on food and agricultural issues have been selected by the McArthur Foundation for what are publicly hailed as "genius grants" - no-string-attached awards of more than \$250,000 to support their innovative research. The agricultural recipients include: Wes Jackson, founder of The Land Institute of Salinas, Kansas, a vocal critic of conventional agriculture who is engaged in long-term research to develop a permaculture of harvestable prairie grains;⁴⁹ Kent Whealy of Decorah, Iowa, who with his wife, founded Seed Savers, an international network of gardening enthusiasts which has become the largest private network devoted to preserving genetic diversity of heirloom vegetables and horticultural plants, and which has raised awareness over loss of genetic diversity from modern seed breeding and crop improvement; Dr. I. Garth Youngberg, a former U.S. employee who worked on "organic farming," who founded what is now the Henry A. Wallace Institute for Alternative Agriculture; and Gary Paul Nabhan an ethno-botanist from Phoenix, Arizona, and leader of Native Seed Search, whose books *Harvesting the Desert* and *Enduring Seeds* provide important insights on the linkage of traditional crops and farming systems with the future of agricultural production. This recognition of agricultural issues by the McArthur Foundation is just one example that there is public concern about the future of farming and the impact changes in the structure of agriculture have on the public. Expanding that awareness and providing the resources so the issue can be fully joined are important challenges.

J. BROADENING THE DEBATE AND PLAYERS IN THE FUTURE OF AGRICULTURE

A final reason for optimism over the future of farming is in some ways a cumulative reflection of a number of the developments discussed above. The discussion of the various issues indicates that a wide array of topics can be seen as legitimate parts of the agriculture and food policy debate.

48. For a discussion of the role law plays in shaping agriculture in the United States, see Neil D. Hamilton, *The Role of Law in Shaping the Future of American Agriculture*, 38 *DRAKE L. REV.* 573 (1989).

49. For more information about Jackson's work with permaculture, see generally WES JACKSON, *NEW ROOTS FOR AGRICULTURE* (1980).

Traditionally the control over the agenda of agriculture was with what Paarlberg referred to as the iron triangle of the USDA, the farm groups, and Congress. In his 1979 book, he noted that as a "new agenda" of issues emerged, such as food safety, farm worker protection, and environmental quality, an array of new interests and players entered the farm policy debate, ultimately gaining significant control over large parts of the agenda.⁵⁰ While some elements of agriculture still resist portions of the new agenda and resent the involvement of "outsiders," the truth is the expansion of the agricultural policy debate has been good for farmers. Food and agriculture policy is too important to our nation to have it left either to agribusiness companies or to farmers. Only by bringing consumers, farm workers, environmentalists and others into the debate can we develop a farming system which produces what the public wants. Only by having these parties engaged in the debate and knowledgeable about the economic and physical realities of agriculture, can farmers expect the type of understanding and support they believe they should get from the public. Food production at a economic level depends as much on demand creating markets as it does on production creating the supply. Farmers have to be responsive to what consumers demand. The equation is no different when considering agricultural policy or social policy. Farmers must understand what the public expects of them in terms of stewardship, just as the public must recognize how the structure of agriculture we support will determine how agriculture fulfills its social responsibility. Expanding the debate over food and agricultural policy and engaging a greater diversity of interests in that debate will be important in shaping the future of our farming system and insuring it can meet both our physical needs of food and fiber as well as our social and psychological needs. Hopefully the result of this debate will be to slow the process of industrialization and to forward development of a sustainable agriculture so the future of agriculture in our nation is one which includes farmers.

50. See generally DON PAARLBERG, *FARM AND FOOD POLICY: ISSUES OF THE 1980's* (1980).

