Reaping What We Have Sown: Public Policy Consequences of Agricultural Industrialization and the Legal Implication of a Changing Production System

by

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REAPING WHAT WE HAVE SOWN: PUBLIC POLICY CONSEQUENCES OF AGRICULTURAL INDUSTRIALIZATION AND THE LEGAL IMPLICATIONS OF A CHANGING PRODUCTION SYSTEM

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I. INTRODUCTION: WHAT DO WE MEAN BY INDUSTRIALIZATION?

The impact of industrialization on American agriculture is a topic of great significance to farmers, lawyers, and society alike. An earlier article, "Agriculture Without Farmers?"[1] addressed three main issues implicated by

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1. *See* Neil D. Hamilton, *Agriculture Without Farmers? Is Industrialization*

industrialization of food production—the role of farmers in an industrialized agriculture, the impact on building sustainable agriculture systems, and reasons why society must address the implications of industrialization. A central question is whether the forces stimulating industrialization can be harnessed for the improvement of all parties affected by the food and agricultural sector—consumers, farmers, and businesses alike—or whether it will simply be another means to increase the profits and market shares of the companies promoting it, further eroding the role of farmers and compromising the interests of consumers.

The purpose of this Article is to consider industrialization from the perspective of public policy by identifying and addressing legal implications associated with the change. The Article considers ten different subject areas of agricultural law and policy which illustrate statutory or judicial questions raised by industrialization. The Article considers how the move toward industrialization is furthering the divisions within the structure of agriculture and concludes by discussing the implications this segmentation may have on public policy.

Before turning to the discussion, it is important to clarify the term in question. An article dealing with "industrialization of agriculture" must recognize that the term is susceptible to as many meanings as is "sustainable agriculture." Perhaps both ideas are like what the jurist said about pornography—you know it when you see it.[2] Everyone involved in the food and agricultural system in the U.S. can see the industrialization of agriculture.[3] Certainly the trend is very apparent in Iowa and across the nation in the range of contentious issues relating to the changing structure of swine production.[4] These issues include: (1) the concentration of production into large units, (2) the increase in integrated or corporate, nonowner operated facilities; (3) the geographic shift of production to nontraditional areas; and (4) the increased use of hired labor or contract growers.

Associated with these trends are a variety of social and economic issues, most notably environmental and odor concerns.[5] The controversies sur-

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Restructuring American Food Production and Threatening the Future of Sustainable Agriculture?, 14 N. ILL. U. L. REV. 613 (1994).

2. The famous remark about pornography, "I know it when I see it," was made by Justice Stewart in a concurring opinion in Jacobellis v. Ohio, 378 U.S. 184, 197 (1964). For a discussion of the comment and the United States Supreme Court's jurisprudence on obscenity and pornography, see HUNTER R. CLARK, JUSTICE BRENNAN: THE GREAT CONCILIATOR, 198-99 (1995).

3. For a discussion of the definition of industrialization, see Hamilton, *supra* note 1, at 633-39.

4. For a discussion of the recent changes in the U.S. swine industry, see Leland Southard & Steve Reed, *Rapid Changes in the U.S. Pork Industry*, AGRIC. OUTLOOK, Mar. 1995, at 11. *See also* Steve Marberry, *Structure Is Real Issue Facing Mega Farms*, FEEDSTUFFS, Sept. 5, 1994, at 16; Chris Hurt, *Industrialization in the Pork Industry*, CHOICES, Fourth Quarter 1994, at 9.

5. The situation in the Iowa swine industry recently made the front page of the *Wall Street Journal*. *See* Scott Kilman, *Iowans Can Handle Pig Smells, but This Is Something Else*,

rounding construction of new large-scale production facilities have triggered numerous land use disputes, a variety of lawsuits, and calls for new rules and legislation.[6] The resulting societal divisions have heightened political tensions in communities throughout the region and complicated the lives of pork producers and their organizations.[7] The recent spill of over 25 million gallons of swine wastes from a North Carolina lagoon[8] and the leakage of 1.5 million gallons from an Iowa lagoon[9] are the unfortunate but predictable consequences of the changes in swine production—too much waste stored either in poor locations or in improperly constructed facilities. These episodes may also serve as bellwethers for opponents of large-scale production who will argue that they illustrate the environmental consequences resulting from industrialized production and the need for increased regulatory controls.

In addition to the environmental issues, there are a range of other social and economic concerns related to industrializing swine production.[10] At the producer level these concerns include: market access for independently produced swine, the fairness of contract terms, the adequacy of the price discovery function in the public marketplace, the availability of price premiums from packers to large integrated growers, cost and availability of "improved" genetics, and changes in traditional price cycles in swine markets. At the community level, besides the environmental issues noted above, there are questions about the location of processing plants, the social issues relating to the influx of a large nontraditional work force, and the economic effects of shifting ownership of swine from a diverse set of local owners to concentrated groups of owners who are often nonresidents.

Collectively these are just a sampling of issues related to industrialization of one segment of U.S. agricultural production. The issues are listed not as a litany of ills, as each issue has two sides to the debate, but instead to illustrate that in order to consider the possible public policy consequences of

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WALL ST. J., May 4, 1995, at A1.

6. *See, e.g.*, Kenneth Pins, *Feds May Alter Tax Law to Limit Large Hog Farms*, DES MOINES REG., July 27, 1995, at 8A.

7. *See, e.g.*, Jay P. Wagner & Perry Beeman, *Study Counts Manure Spills*, DES MOINES REG., July 27, 1995, at 1A. This article discusses a National Pork Producers Council study of environmental enforcement actions involving livestock production, conducted by the Drake University Agricultural Law Center, the results of which were released early in response to press demands stimulated by three large swine waste spill incidents in Iowa in the space of ten days. *Id.*

8. *See* Ronald Smothers, *Waste Spill Brings Legislative Action*, N.Y. TIMES, June 30, 1995, at A8.

9. *See, e.g.*, Anne Fitzgerald, *Public Not Told as Manure Flowed*, DES MOINES REG., July 22, 1995, at 10S.

10. For a thorough discussion of the issues involved in the growing interstate struggle over swine production, see the series *Big Pork Moves In* written by a team of reporters, Jay P. Wagner, Dirck Steimel, and Jerry Perkins, which appeared in the Des Moines Register in May 1994. *See, e.g.*, Jay P. Wagner, et al., *A Furor over Big Hog Farms*, DES MOINES REG., May 22, 1994, at 1A.

industrialization, we must first recognize the relevant public concerns to which policy and law may be asked to respond.

On its face the term "industrialization of agriculture" poses a threat to traditional farm interests—in the sense that it will change both the structure and independence that have made farming the satisfying occupation cherished by producers.[11] Industrialization may result in an extension by processors or suppliers into production—primarily through contracting—in ways and to a magnitude not previously experienced. It will have many consequences, not the least of which may be that by blurring the distinction between farming and industry, society's perception of the very function and nature of farming may change, causing a re-examination of "what is agriculture" in both a legal and social context.[12]

This does not mean that an industrialized agriculture must necessarily threaten farmers' interests; that will be a function of how it takes shape. But it is important to recognize several points. First, any additional profits associated with industrialization will not be shared equitably with farmers unless the crops or livestock are produced or marketed in ways which guarantee such sharing. Second, while there are many common interests between the farm community and agricultural industries, their interests are not identical and on many issues—not the least of which is price—they conflict. News reports in early 1995, noting how increasing grain prices were a threat to agriculture, illustrate how the interests of farmers and integrated producers have blurred. Historically on the author's grain farm in southwest Iowa, rising grain prices were never viewed as a threat.

II. CONSIDERING TEN EXAMPLES OF THE POLICY CONSEQUENCES OF AGRICULTURAL INDUSTRIALIZATION

Public policy will be a fundamental determinant in shaping "industrialization." Whether the issue is interpreting the contracts used to integrate production, structuring new businesses such as farmer cooperatives, or protecting the interests of consumers, law will play a central role in shaping society's responses. In many ways the development of these laws and policies will represent society's answer to the question posed about social migration by John Steinbeck in *The Grapes of Wrath*: "what is to be done about it?"[13] The impacts from the shift will be felt across many issues: the type of farm

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11. Thomas N. Urban, former President of Pioneer Hi-Bred International, Inc., the world's largest supplier of hybrid seed, believes: "Production 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." Thomas N. Urban, *Agricultural Industrialization: It's Inevitable*, CHOICES, Fourth Quarter 1991, at 4.

12. For a discussion of the legal and social context of the issue "what is agriculture?" see Neil D. Hamilton, *Feeding Our Future: Six Philosophical Issues Shaping Agricultural Law*, 72 NEB. L. REV. 210, 213-20 (1993).

13. JOHN STEINBECK, THE GRAPES OF WRATH viii (Limited Editions Club 1940) (forward by Joseph Henry Jackson).

programs we have, the role of farm groups and how they relate to members, and the methods by which commodities are produced, priced, and marketed. What follows is an inventory of possible public policy consequences of industrialization.

A. *Contract Production*

Perhaps the most directly identifiable legal impact of industrialization is the increased use of contracts to control production and marketing of commodities.[14] Contracting has been used historically with specialty crops and poultry, and is increasingly used with swine and grains. Contract production, now being promoted with "value-added" and "identity preserved" grains, may hold the promise of new markets and price premiums. But increased use of production contracts will raise many new legal issues, including the fairness and interpretation of the contract terms, satisfaction of contract specifications, risks of nonpayment,[15] and the role of state law to protect the interests of farmers. Minnesota is a leader in adopting laws and regulations to promote fairness in agricultural production contracts.[16] Legislators in other states will no doubt be asked to consider similar laws.[17]

Contract production arrangements will tie producers to marketers of specialized genetics and to processors, perhaps changing the traditional methods of marketing, pricing, and payment for grain. Contracting has been described by some as "risk sharing;"[18] if so, the law has an important role to play in ensuring that contracts in fact are risk sharing and not just risk shifting.[19] Producer access to contracts, the level of integrator control, and mechanisms to resolve disputes and ensure payment are all legitimate policy issues which may need to be addressed in legislation.

B. *Labor Issues*

Contract production and other forms of industrialization implicate a variety of labor issues. Contracting methods may result in a fundamental shift

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14. For a discussion of the issues related to contract production, see Neil D. Hamilton, *Why Own the Farm If You Can Own the Farmer (and the Crop)?: Contract Production and Intellectual Property Protection of Grain Crops*, 73 NEB. L. REV. 48 (1994).

15. *See, e.g.*, Gary Gunderson, *Lieske Genetics Files Bankruptcy*, AGRI NEWS, Feb. 9, 1995, at A1; Paul Adams, *Lieske's Bankruptcy Places Hog Growers in Tough Position*, AGRI NEWS, Feb. 9, 1995, at A1 (discussing the difficulties faced by several farmers who had been raising swine on contract for a company that was now unable to pay for the feed being used).

16. *See, e.g.*, MINN. STAT. ANN. §§ 17.90-.98, § 514.945 (West Supp. 1994).

17. For a discussion of recent state legislative actions addressing issues related to production contracts, see Neil D. Hamilton, *State Regulation of Agricultural Production Contracts*, 25 U. MEMPHIS L. REV. 1051 (1995).

18. Urban, *supra* note 11, at 7.

19. For a legal resource written to assist producers and their lawyers in considering contracting options, see NEIL D. HAMILTON, A FARMER'S LEGAL GUIDE TO PRODUCTION CONTRACTS (1995).

in the nature of the farmer's work. Instead of being independent businesses, farmers may come to resemble wage employees, only paid on a piece-work rather than hourly basis. However, under most contracts the farmer is not legally an employee but is an independent contractor[20] and thus is not protected by workers compensation or other employee benefits commonly required in other industries. The implication of this for society is that while supporters of industrialization argue that it leads to greater efficiency and lower food prices, those "savings" may be gained in part by exposing agricultural workers and now the farmers in an industrialized system, to types of economic and health risks society will not countenance in other "industries."

Another significant impact of the increased use of contracts is on producer organizations which will feel pressure to evolve. Issues such as working conditions for growers, price bargaining for contracts terms, and levels of compensation may become as important as market promotion. Farm organizations will face pressures to function more like labor unions, as is the situation with many European farm organizations. The growth of the National Contract Poultry Growers Association as a counter-balance to the power of the poultry integrators is an example of the new style of farm organization in the U.S.[21] The federal Agricultural Fair Practices Act, which

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20. The following is an independent contractor term in a grain production contract found in the 1993 DuPont High Oil Corn Contract.

> 9. INDEPENDENT CONTRACTOR
>
> GROWER is for the purposes of this agreement an independent contractor and nothing contained in this agreement shall make GROWER an employee or agent of DU PONT or authorize him to act on DU PONT's behalf. GROWER shall indemnify and hold DU PONT harmless from any and all claims, in any way connected directly or indirectly with GROWER's operations pursuant to this agreement including GROWER's use of herbicides and insecticides. GROWER shall carry adequate public liability and property damage insurance.

21. The recent formation of the National Contract Poultry Growers Association (NCPGA) has been an important development influencing the legal situation for poultry growers. This development, which has been accompanied by the creation of state-based grower groups, has been important in providing growers a stronger voice in dealings with contractors, and in giving members the confidence and knowledge which comes from sharing common experiences with others. The NCPGA has been actively involved in promoting legislation on growers' rights and has helped introduce legislation in North Carolina, Oklahoma, Alabama, Mississippi, Florida, and Louisiana. The organization publishes a monthly newsletter, the POULTRY GROWERS NEWS. The creation of the NCPGA and its continued growth into an economic and political force will undoubtedly have an impact on the actions of contracting companies. For more information about the NCPGA contact John Morrison, Executive Director, P.O. Box 824, Ruston, LA 71273 or call 1/800-259-8100, FAX 318/251-2981. *See* Charles Johnson, *Uproar in the Chicken House*, FARM J., Feb. 1994, at AC-1; Robert H. Brown, *Contract Poultry Growers Begin Nationwide Organizing*, FEEDSTUFFS, Sept. 7, 1992, at 3; Steve Marberry, *Poultry Growers Suing Contractors, Organizing for Clout*, FEEDSTUFFS, Jan. 18, 1993, at 22.

prohibits integrators from terminating growers due to their organizing activities, illustrates the protections which law may give producers.[22]

C. *Biotechnology and Genetic Engineering*

A common assumption in U.S. agriculture is that biotechnology will expand the range of crops produced and their potential uses. If the assumption proves true, then biotechnology will be a central component of "industrialization." The ability to more rapidly adopt new technologies is often suggested as a justification for industrialization. Biotechnology may hold the key to answering the world's nutritional needs and may bring riches to the companies who create and market them. But will it mean new profits for the farmers who raise the crops?

Farmers view access to improved seed in the same way seed companies do—if plant breeders produce better, higher yielding seed, then farmers and the seed companies will prosper. But as genetic engineering creates the potential for "added value," the companies who develop the new crops by using their research funds to add the value will want to protect their financial interests. Companies will look for ways to claim economic rights farther out the production flow of a crop in order to capture the value they contribute and return that value to investors. Companies will not be content just to sell improved seeds or breeding stock, but instead may try to control production of "value added" crops so a portion *or all* of the enhanced value goes to the companies.[23] This trend is clear in both livestock and crop production and is

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22. The Agricultural Fair Practices Act of 1967, 7 U.S.C. §§ 2301-2306 (1994). The Agricultural Fair Practices Act (AFPA) offers some protection to growers trying to organize. Congress passed AFPA to protect the right of farmers and ranchers to form associations with other growers to bargain for better prices and terms with handlers and processors. AFPA sets out a number of prohibited practices for "handlers," defined as:

> (a) . . . any person engaged in the business or practice of (1) acquiring agricultural products from producers or associations of producers for processing or sale; or (2) grading, packaging, handling, storing, or processing cultural products received from producers or associations of producers; or (3) contracting or negotiating contracts or other arrangements, written or oral, with or on behalf of producers or associations of producers with respect to the production or marketing of any agricultural product; or (4) acting as an agent or broker for a handler in the performance of any function or act specified in clause (1), (2), or (3) of this paragraph.

Id. § 2302(a). AFPA focuses on prohibiting handlers from discriminating against or intimidating producers because of their membership in or exercise of their right to organize associations of growers. *See* § 2303. One weakness of the law is that it does not require a company to contract with any particular grower or grower organization, but only prohibits discrimination against them.

23. In 1993, DuPont Co., traditionally known for producing agricultural chemicals, announced its expansion into identity preserved grain production. The company built a 35,000 square-foot office-laboratory in Des Moines, Iowa, and opened a new division called Optimum Quality Grains (OQG), to contract with producers to raise value-added grains. In

exemplified by the increased use of production contracts which control ownership of the underlying parent materials.

D. *Intellectual Property Rights and Agricultural Genetics*

The question of who will benefit from improved genetics will be largely determined by intellectual property laws. The U.S. leads the world in recognizing intellectual property rights in living materials.[24] The 1930 Plant Patent Act[25] protects breeders of asexually reproducing plants, and the recently amended 1970 Plant Variety Protection Act[26] gives breeders of sexually reproducing crops patent-like protections. Hybrid seed breeders may also use the law of "trade secrets" to protect parent lines. As the result of a 1980 United States Supreme Court ruling, the United States Patent Office was granted "utility patents" for hundreds of plant varieties.[27] Three years ago Agracetus, of Madison, Wisconsin, announced that it received a United States patent for "all genetically engineered cotton."[28] Early in 1995, Mycogen received a patent on all crops using synthesized Bt for pest protection.[29]

1993, the company expected to contract with growers to plant 25,000 to 30,000 acres of grain. To date, the most important crop being produced is high-oil corn, much of which is being marketed directly to poultry producers in Mexico. *See* Veronica Fowler, *DuPont Lab Set for Iowa*, DES MOINES REG., June 4, 1993, at 8S; Dale Johnson, *DuPont to Start Value-Added Grain Market in Iowa*, IOWA FARM BUREAU SPOKESMAN, June 12, 1993, at 3; Karol Wrage, *DuPont Enters the Seed and Grain Industry*, SEED AND CROPS INDUS., Dec. 1992, at 8.

24. *See* Neil D. Hamilton, *Who Owns Dinner: Evolving Legal Mechanisms for International Control and Use of Plant Genetic Resources*, 28 TULSA J. INT'L L. 587 (1993) (reviewing national and international issues concerning intellectual property rights in plants and seeds).

25. 35 U.S.C. § 161 (1994).

26. 7 U.S.C. §§ 2402, 2541 (1994).

27. *See* Diamond v. Chakrabarty, 447 U.S. 303 (1980).

28. Hamilton, *supra* note 24, at 650.

29. *See* Karol Wrage, *Mycogen Granted Synthetic Bt Gene Patent: Will This 'Lock Up' All Bt's in Crops?*, SEED & CROPS INDUS., Feb. 1995, at 14. While much of the public attention to the controversy over broad-based plant patents in the U.S. has focused on Agracetus' claims, there have been several other decisions of importance. In early 1995, Mycogen Corporation of San Diego, California, was granted a patent (No. 5,380,831) covering the process for modifying the gene sequences in bacterial genes in *Bacillis thuringensis* (Bt) which optimize insecticidal proteins in plants. *See id.* at 14-15; *Patent Office Reverses Decision on Species-Wide Patent*, 5 THE GENE EXCHANGE, Dec. 1994, at 1, 9. The company reported that it will license rights to the synthetic Bt method for nonstrategic crops such as soybeans, rice, wheat, and vegetables. *See* Wrage, *supra*, at 14-15. For cotton and corn, however, the company plans to keep the process exclusively for use with its collection of proprietary Bt genes. *See id.* The patent will no doubt prove controversial given the amount of research already underway and the interest in the use of Bt in crop breeding for pest control. For a discussion of the possible impacts of the patent, which has already lead to litigation between major seed companies, see *id.*

In a related development, Agracetus' European patent for genetically engineered soybeans

These developments indicate the extensive nature of patenting of crop genetics. But the trend is not without critics. In December 1994, the United States Patent Office canceled the Agracetus cotton patent, in part because of the agricultural sector's concerns.[30] Does granting "patents" on new crops always benefit agriculture and society? Will a scramble to claim ownership in plants further erode public plant breeding? These are among the difficult public policy issues industrialization could cause society to consider.

The most immediate example of how intellectual property laws affect farmers is the recent controversy over the "farmer exemption" to the Plant Variety Protection Act (PVPA).[31] The right of farmers to save protected seed and sell some to other farmers was recently challenged in the federal courts in an alleged illegal "brown bagging" case.[32] The federal court ruled that the "farmer exemption" was limited to the amount of seed a farmer needed to replant a crop, with any allowable sales being made from what was left of the saved seed.[33] The Federal Circuit Court of Appeals reversed and held that the farmer exemption allowed a much larger quantity of seed, perhaps as much as one half of the amount produced, to be saved and sold to others whose pri-

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is under attack. Both Monsanto and the Rural Advancement Foundation International (RAFI) submitted opposition to the European Patent Office concerning its grant of a species patent for soybeans to Agracetus. The patent (No. 301,749 B1) was issued March 4, 1994, and covers all forms of genetically engineered soybeans. RAFI's opposition is based on its belief that such broad patents to whole species of plants are a threat to world food security and morally unacceptable, as well as technically flawed. RAFI's efforts to block the European patent are partially funded by a grant from the Jessie Smith Noyes Foundation. Monsanto opposes the patent because it believes the patent is too sweeping and would adversely affect soybean research. *See Monsanto, RAFI Oppose European Soybean Patent*, BIOTECH REPORTER, Dec. 1994, at 1, 3.

30. The United States Patent Office in early December 1994, notified Agracetus, a subsidiary of W. R. Grace, that it was canceling two patents granted the company on genetically engineered cotton. *See* Teresa Riordan, *U.S. Revokes Cotton Patents After Outcry from Industry*, N.Y. TIMES, Dec. 8, 1994, at C1. The Agracetus patents which covered all forms of genetically engineered cotton, have been very controversial since they were issued in 1992. Criticisms have come from groups opposed to increasing control over plant genetics, such as RAFI, from the public plant breeding sector, and from some in the seed industry. *See, e.g., Control of Cotton: The Patenting of Transgenic Cotton*, RAFI COMMUNIQUÉ, July-Aug. 1993. The official requests to the Patent Office to re-examine the cotton patent came from the United States Department of Agriculture's (USDA) Agricultural Research Service and from an unnamed private party. The attack on the patent is partially based on claims it was granted for existing technology, to which USDA scientists had contributed. Under the law, Agracetus has a period of time to respond to the Patent Office concerns. If the decision to revoke stands, Agracetus can appeal the decision within the agency and then in the Federal courts. The patent will remain valid until all of the company's appeals are exhausted. *See also Patent Office Reverses Decisions on Species-Wide Patent, supra* note 29, at 1.

31. 7 U.S.C. § 2543 (1994).

32. Asgrow Seed Co. v. Winterboer, 795 F. Supp. 915 (N.D. Iowa 1991).

33. *Id.* at 920.

mary occupation was farming.[34] The case went to the United States Supreme Court which on January 18, 1995, in an eight to one decision interpreted the "farmer exemption" narrowly to limit the amount of seed which can be saved and possibly sold by farmers.[35] While the *Winterboer* litigation was underway, the seed industry asked Congress to limit the "farmer exemption" to prohibit such sales by farmers, in part, to bring the United States into compliance with the 1991 amendments to the International Convention for the Protection of New Varieties of Plants (UPOV), which provided for plant breeders' rights. In the fall of 1994 Congress amended the PVPA to restrict the ability of farmers to save and sell protected seeds.[36] Intellectual property

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34. Asgrow Seed Co. v. Winterboer, 982 F.2d 486 (Fed. Cir. 1992). For a discussion of the lower court opinions, see Neil D. Hamilton, *Asgrow v. Winterboer Case Tests Interpretation of Controversial PVPA Farmer Exemption*, 9 DIVERSITY 48-51 (1993).

35. Asgrow Seed Co. v. Winterboer, 115 S. Ct. 788, 792-96 (1995). The much anticipated ruling resolves a dispute in which one of America's largest plant breeding concerns accused an Iowa farmer of illegally infringing upon a protected variety of soybeans by raising and selling large quantities to other farmers, a practice known as "brown-bagging."

In essence the Supreme Court's ruling reached the same result as the district court, although in terms of legal analysis the Court drove around the other side of the mile to get to the same place. The statutory interpretation involved was how to read the clause allowing some saved seed to be sold. Was the ability to sell seed limited by other restrictions, for example, the seed being sold must have been legally "saved" in the first place? Or was the sales exception a somewhat open-ended exemption from the PVPA's scheme to protect the rights of seed breeders and companies?

The Supreme Court reached its decision based on the following statutory interpretation of § 2543. First, farmers have an unlimited right to raise and sell seed for "nonreproductive purposes" free of claims of infringement. *Id.* at 792. Second, the right of a farmer to save seed for other purposes, such as reproduction, is limited by the requirement that a variety may not be sexually multiplied "as a step in marketing" the variety for seed purposes. *Id.* at 793. This limitation arises because of the incorporation of the § 2541(3) prohibition into the section. *See id.* Conversely, the exemption which allows farmers to save seed for replanting is an exception to the restriction on "multiplying" seed for marketing. *Id.* Third, it then follows that the exception which allows farmers to sell saved seed to other farmers is limited by the prohibition of multiplying seed for the purposes of marketing it for reproduction. *See id.* Fourth, this means that the seed which can be legally sold for reproduction as seed to other farmers, must be limited to the "saved" seed left over after a farmer has replanted the crop or as a result of a change in planting intentions. *Id.* at 793-94. In the Court's view, to read the exemption more broadly, as did the Court of Appeals, would mean that farmers could multiply seed and save it specifically for sale as seed to other farmers. This, however, would be a direct violation of the statutory limitation not to reproduce seed "as a step in marketing" the seed for purposes of reproduction.

36. Plant Variety Protection Act Amendments of 1994, § 10, Pub. L. No. 103-349, 108 Stat. 3136, 3142 (codified as amended at 7 U.S.C. § 2543 (1994)). The seed industry had as a goal for many years reforming the farmer exemption of the PVPA. It finally succeeded in the fall of 1994 when Congress amended the PVPA to repeal the farmer sales provision of the farmer exemption. This means the amendment is only effective, however, for varieties certified after April 4, 1995. *Id.* at 3145. This means the amendment created a two-tier system

laws for biotechnology are an international issue as seen in continuing United States opposition to the Biodiversity Treaty and inclusion of such provisions in both the GATT and NAFTA agreements.[37]

E. *Land Stewardship and Environmental Attitudes*

A central issue facing many farmers today is the public's increasing demand for greater environmental protection. The impact of industrialization on this issue is an open and important question. Will it change the relation between producers and the land; will the land be viewed as only a production factory for maximizing yield, rather than as a long-term resource to protect?[38] Or will industrialization provide farmers with higher incomes and new technologies making environmental compliance more possible?[39]

How "stewardship" is handled in an "industrialized" agriculture will have direct implications on environmental law. Industrialization could see the environmental community promoting the use of regulatory approaches for agriculture.[40] As agriculture becomes industrialized, it should be treated like the "industrial" sector, meaning the "command and control" style of envi-

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of farmer exemptions depending on when a variety was certified. Consequently, *Winterboer* remains of great significance to the seed trade for existing varieties.

President Clinton signed the bill in October 1994, amending the provisions of the PVPA and restricting the rights of farmers to sell saved seed. Plant Variety Protection Act Amendments, Pub. L. No. 103-349, 1994 U.S.C.C.A.N. (108 Stat.) 3136. The bill was introduced in the Senate by Senator Bob Kerrey of Nebraska as S. 1406 and as H.R. 2927 by Representative Kik de la Garza in the House. *See Congressional Passage of New PVP Law a Triumph for Seed Industry*, DIVERSITY, vol. 10, #3, at 34-35 (1994). The new law makes a number of changes in the PVPA, which is the primary method for breeders of sexually reproducing crops such as wheat, soybeans and cotton to protect their rights in new varieties. *See* 7 U.S.C. §§ 2321, et seq. (1994). The bill includes a number of amendments which will bring United States law into agreement with the terms of the 1991 UPOV treaty on "breeders' rights." The provisions include: incorporating the concept of an "essentially derived variety" into United States law; extending the protection to 20 years; changing the law to "first to file"; revising the term "breeder"; adding a definition of "variety"; adding definitions concerning tubers; and amending the word "distinct." Plant Variety Protection Act Amendments of 1994, Pub. L. No. 104-349, 1994, U.S.C.C.A.N. (108 Stat.) 3136.

37. *See* Hamilton, *supra* note 24, at 610-26 (discussing the international trade agreements and the debate over intellectual property rights law).

38. *See, e.g.*, Gordon S. Carlson, *Changing Farmer Profile Has Environmental Policy Implications*, FEEDSTUFFS, Dec. 12, 1994, at 4.

39. For a general discussion of the attitudes toward environmental protection, see William P. Brown et al., *Stewardship Values: Still Valid for the 21st Century?*, CHOICES, Third Quarter, 1992, at 20.

40. *See* Jeffrey Zinn & John Blodgett, *Commentary, Agriculture Meets the Environment: Communicating Perspectives*, J. SOIL & WATER CONSERVATION, Mar.-Apr. 1994, at 136 (analyzing the clash of perspectives between the agricultural and environmental communities).

ronmental laws applied to "smoke stack" industries should apply.[41] Traditional arguments against using this approach will diminish; for example, an industrialized agriculture will be better able than farmers to pass the costs of environmental protection on to consumers in higher prices.[42] Support by farm organizations, such as the American Farm Bureau Federation and the National Cattlemen's Association, for "takings" legislation, which would restrict society's ability to protect the environment and open public treasuries to essentially unlimited damage claims by landowners, do little to portray farmers as the stewards of the environment they claim to be.[43]

F. *Financing and Marketing*

Financing and marketing agricultural production will be affected by industrialization in several ways. First, processors integrated into production may have an advantage in obtaining financing because lenders are willing to finance larger entities. Second, companies marketing inputs or integrating into production will become increasingly involved in the direct financing of production expenses, which has already been seen in John Deere's and Pioneer's extensive credit operations and the role of swine integrators in financing the construction of new buildings. A related issue will involve the packaging of proprietary technologies. It may become increasingly common for farmers to face business requirements such as the following: If you buy our seeds you must use our pesticide or if you breed our gilts you must slaughter at our plant. The increased market power created by industrial agriculture may result in a re-examination of the application of anti-trust laws to the sector.[44]

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41. *Id.* at 138-39.

42. *Id.* at 141.

43. For a discussion of the new proposed "takings" laws in an agriculture context, see Neil D. Hamilton, *Property Rights, Takings Issue Oversold to Agriculture*, FEEDSTUFFS, Jan. 23, 1995, at 14. The backlash which agriculture can expect to receive for such positions can already be seen in the Environmental Working Group's report *City Slickers*, which discussed how nonfarm residents receive farm program benefits. *See, e.g.*, Stephen Engelberg, *Farm Aid to Chicago? Miami? Study Hits an Inviting Target*, N.Y. TIMES, Mar. 16, 1995, at 1A; *see also* Carl Pope, *Bringing in the Sheaves*, SIERRA, May/June 1995 at 14 (suggesting that federal regulation of agriculture and the environment is beneficial to farmers despite arguments to the contrary); Paul Rauber, *Down on the Farm Bureau*, SIERRA, Nov./Dec. 1994, at 32 (discussing the decreasing number of family farms due to Agribusiness).

44. *See* George Anthan, *Fewer 'Hands' Processing Food*, DES MOINES REG., July 23, 1995, at G3. The USDA, under Secretary Glickman, is reportedly involved in several on-going studies concerning the potential impact of concentrated market power in the livestock sector. *Id.* These studies include an examination by the Packers and Stockyards Administration (PSA) of concentration in the meatpacking industry and another PSA study of the effect of vertical integration on the swine industry. *Id.*

G. *Cooperative Action by Farmers*

Industrialization may provide an increased profit potential for farmers who get on board now. No doubt there is money to be made in agriculture or at least from agribusiness—or "in farming the farmer," as my father used to say. But it is important for farmers to realize that they will need to work to receive a portion of any increased economic returns. There is no reason producers should expect companies industrializing agriculture to "share" their increased earnings, beyond the minimum required—they are not charities. If it is no more difficult to raise a bushel of high-oil corn than commodity corn why should farmers be paid more to do so? To profit from industrialization, farmers will need to either earn it through providing better quality products or assuming new risks, or they will need to gain it through market power, negotiation, or developing the markets themselves. As the economic activity of agriculture continues to shift to be affected by factors beyond the farm gate, the economic interests and power of farmers will continue to wane.[45] If farmers desire market access and the ability to control the marketing of their products, a new interest in cooperative action must occur.[46] Recent examples of new farmer owned cooperatives in North Dakota, Iowa, and Minnesota may be evidence of increased interest in cooperation, the traditional vehicle used by producers to "industrialize" production up toward the market.[47]

H. *Tenancy and Land Ownership*

Will industrialization accelerate the trend to separate land ownership from operation?[48] Concentration of production and development of capital-intensive production methods may help fuel the exodus of producers out of

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45. *See* Stew Smith, *"Farming"—It's Declining in the U.S.*, CHOICES First Quarter, 1992, at 8 (discussing the relative contributions of the different sectors of agriculture).

46. There is some evidence that this resurgence in farmer interest in cooperation is occurring, *see, e.g.*, Randall Torgerson, *Co-op Fever: Cooperative Renaissance Blooming on Northern Plains*, FARMER COOPERATIVES, USDA, Sept. 1994, at 12.

47. *See, e.g.*, Laura Sands, *Pastabilities: It's a High-Risk, High-Profit Gamble for Farmers Investing in the Dakota Growers Pasta Company*, TOP PRODUCER, Feb. 1993, at A-2. Such efforts are seen in the recent construction of a $12 million 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. *Id.* In Iowa over thirty cooperatives have formed the Heart of Iowa program to market member produced high-value crops for a premium. *Id.* Throughout the Midwest, pork producers are forming feeder pig cooperatives to build jointly-owned farrowing operations and marketing networks to obtain price premiums from packers. *Id.*

48. For example, in Iowa in recent years there has been gradual increase in the amount of land farmed by tenants. Data from the *1992 Census of Agriculture* reveals that of the 31.3 million acres of farmland in Iowa, more than 16.56 million acres are rented ground while 14.78 million acres are farmed by the owner, meaning that more than 52% of Iowa farmland is now operated under some form of tenancy. *See* 1992 CENSUS OF AGRICULTURE, IOWA VOLUME, tbl. 11, at 317 (1992).

agriculture. The increase in farm size has been accompanied by an increase in tenancy as more land is in the hands of nonfarm heirs or is sold to nonfarm investors. The current demographics of farmers show that in the next decade a large portion of farmland may be transferred.[49] The combination of financial obstacles to beginning new farms and an atmosphere of "industrialized" agriculture which relies on access to production contracts and large investments in buildings and equipment, may mean more land concentration and tenancy. Increased tenancy will make the lease arrangements used more important[50] and will exacerbate other associated societal concerns such as stewardship and the effect on rural economies.

These shifts will increase the need to develop effective ways to pass farming operations on to nonfamily members as intact operations. Too often the traditional result if there is no heir to take over the farm, is to sell or lease the land, auction off the equipment, and raze the house and buildings, making the continuation or re-establishment of the farm nearly impossible. Matching programs for retiring farmers and those who want to start farming, such as Nebraska's Land Link and Iowa's Farm On are small but important steps to changing customary thinking about transferring farms as going concerns.[51]

A policy area obviously affected by industrialization involves the laws limiting corporate farming, some form of which is found in nine midwestern states.[52] These laws are arguably the most visible form of state policy designed to address a feature of industrialization. But some states find themselves dealing with current forms of integration, such as contracting, by using laws designed to address land ownership.[53] Proponents of expanding indus-

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49. *See* Thomas A. Fogarty, *Farmland Ownership Shift Looms*, DES MOINES REG., Apr. 7, 1995, at 1 (discussing a recent Iowa State University study noting that over 61% of the farmland in Iowa is owned by individuals 61 or older).

50. For example, in 1994 the Iowa State Bar Association formally approved the use of a new standard form lease for agricultural tenancies in the state. The new lease was the result of a two year long project by the Agricultural Law Section of the bar and was designed in part to create a lease containing more extensive provisions to address environmental issues which can arise between tenants and landlords.

51. The concept of matching retiring farmers, who do not have heirs who want to take over the farm, with unrelated individuals, who would like to start farming, was created by the Center for Rural Affairs in Nebraska and has since been copied in a number of states. *See, e.g.*, Michael Lev, *Finding New Blood for Farms*, DES MOINES REG., Feb. 19, 1995, at G3; Thomas R. O'Donnell, *A Match Made in Farming*, DES MOINES REG., May 27, 1993, at M1; Dan Looker, *Would-be Farmers Meet Landowners Without Heirs*, DES MOINES REG., June 16, 1991, at J1.

52. *See, e.g.*, Report of the Minnesota Corporate Farm Law Task Force, including Appendix C, giving histories for anticorporate farming laws in other states. Act of May 10, 1994, ch. 622, No. 1948, 1994 Minn. Sess. Law Serv., 622 (West) (Codified as MINN. STAT. ANN. § 561.19 (West 1988)) (creating the Corporate Farm Task Force).

53. For example, under Iowa law, certain corporations may not "directly or indirectly, acquire or otherwise obtain or lease any agricultural land in this state." IOWA CODE § 9H.4 (1995). However the law does not prohibit corporations, which would otherwise be prohibited from acquiring land, from engaging in agriculture through the use of various contract

trialization are pressing for reform of the laws.[54] Several states, including Kansas, Missouri, and Oklahoma, have modified their laws to become more attractive for integrated livestock production, adding interstate competition to the debate in the livestock sector.[55] The economic stakes are high in the fight for shares of a shifting agricultural production system. Iowa has historically led the nation in swine production, accounting for over 25% of swine marketed every year.[56] But Iowa officials now worry about the rapid growth in swine production in states such as North Carolina.[57] As a result, fear of bearing any responsibility or potential blame for "losing the hog industry" to another state, makes Iowa lawmakers and other public officials resist open debate of legitimate issues concerning the structure of hog production.[58]

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production relationships. *Id.* Laws in other states, for example Minnesota, specifically prohibit corporations from "engag[ing] in farming," which is, arguably, a broader prohibition than acquiring farmland. MINN. STAT. ANN. § 500.24.3 (West 1990). In some states broadly worded exceptions, such as "family farm corporations," have created anomalous situations like that found in Missouri, where Continental Grain, one of the world's largest privately held corporations, has argued, apparently sufficiently for purposes of state officials, that it is acting as a family farm corporation for purposes of its Missouri swine ventures. MO. ANN. STAT. § 350.015 (West 1993).

54. For a discussion of the recent debates in states such as Missouri, Kansas, Iowa, and Oklahoma over amending existing laws limiting the agricultural involvement of corporations, see Jim Patrico, *Corporate Farming, Round Two*, TOP PRODUCER, Mid-Feb. 1995, at Z-1.

55. *See* KAN. STAT. ANN. § 5904 (1995). In 1994, Kansas became the latest Midwestern state to make significant changes in its corporate farming law. Kansas had been the only state other than Iowa to prohibit pork packers and processors from feeding or contracting for animals. Seaboard Corporation's decision to construct a large swine packing facility in Guymon, Oklahoma led Kansas lawmakers to amend the law so producers could have the opportunity to feed pigs for packers. In April 1994, Kansas enacted legislation to amend the provisions of the state's corporate farming law prohibiting meat processors and corporations from engaging in swine production. The legislation, Senate Bill No. 554, was signed by the governor, who had vetoed a version of the amendment in 1993. The 1994 law authorizes counties to allow corporate hog operations. The issue must be put to a vote of county citizens only if within 60 days of the county decision a petition protesting the decision is signed by 5% of the "qualified electors of the county" (based on number who voted in the preceding election for secretary of state). The law clears the way for corporate hog farming, either through direct ownership or the use of production contracts, and many Kansas counties have already acted to authorize such ventures. The law specifically provides that use of swine production contracts is not a violation of the corporate farming law by providing such contracts "shall not be construed to mean the ownership, acquisition, obtainment, or lease, either directly or indirectly, of any agricultural land" in the state. The law also includes a number of provisions to regulate the manner in which swine production contracts are used.

56. *See* Jerry Perkins, *Hog Market Goes High Tech*, DES MOINES REG., Jan. 12, 1997, at 4G.

57. See Joby Warrick and Pat Stith, *New Studies Show Lagoons Are Leaking*, THE NEWS & OBSERVER, Mar. 19, 1995, at 2, for a recent discussion of the issue from a North Carolina perspective.

58. State regulation of pork production was a central issue in the 1995 Iowa General

I. *Impact on Farm Policy Development*

The move toward industrialized agriculture will also be reflected in changes in farm programs. Export and production policies will become more oriented to full-scale production and expanding export markets—with conservation and environmental concerns being given less consideration.[59] This will be true for several reasons. First, the making of farm policy will be increasingly dominated by processors and suppliers who control agriculture through contracts and other marketing arrangements. *Inputs suppliers* and marketers have historically favored full production and export reliance. Second, developing "industrial crops," which find value primarily in increased demand, will motivate producers and processors of the crops to support full-scale production. The controversy over alternative fuels policy and ethanol is an example of this. Recently completed negotiations of NAFTA and GATT are in many ways the "industrialization" of national policy towards agricultural exports.[60]

One direct effect of industrialization could be on the current conservation programs, which rely on the interest of producers in remaining eligible for farm program benefits, as well as on long-term land retirement programs such as the Conservation Reserve Program (CRP).[61] Many politicians are arguing for extensive reforms or eventual removal of traditional farm programs, even though the programs are the vehicle through which federal soil conservation efforts are delivered.[62] If federal price and income support programs no longer exist or are economically unpopular with producers, then how will we protect the soil? There is no reason to assume that farmers will abandon conservation plans if price supports and cross compliance do not exist, but there is equally no reason to assume that the public desire and demand for clean water and protecting soils will disappear just because farm programs do. Agriculture interests should use public desires for environmental protection as the basis for demanding public funds to support farm

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Assembly. After considerable debate, the legislature passed an omnibus bill, House File 519, and the governor signed it into law on May 30, 1995. The legislation establishes new minimum separation distances for certain waste handling facilities, authorizes the state to require mandatory manure management plans for waste disposal, amends the state nuisance law to provide enhanced "right to farm" protections for livestock facilities meeting state regulations, and creates an indemnity fund for the use of counties to clean-up abandoned waste handling facilities. *See* H. File 519, §§ 5, 15, 25, 34-36 (Iowa 1995).

59. *See, e.g.*, George Anthan, *Report: Idle Land Is Killing Exports*, DES MOINES REG., May 30, 1994, at A1 (discussing a report by the National Grain and Feed Foundation, affiliated with the companies comprising the commercial grain handling industry).

60. *See, e.g.*, George Anthan, *Ag Officials See 'Golden Era' in Export Trade*, DES MOINES REG., Feb. 19, 1995, at A1.

61. For a recent discussion of the farm policy issues related to conservation, see Carol Kramer & Sarah Lynch, *Conservation, Environment, and the 1995 Farm Bill*, AGRIC. OUTLOOK, Mar. 1995, at 20.

62. For the issues involved in writing the 1995 farm bill, see Richard J. Durbin, *The Elements of a Successful Farm Bill*, 49 J. SOIL & WATER CONSERVATION 339 (1994).

programs. Failing to do so may mean farmers will face mandatory programs to ensure soil conservation and protect water quality but without public funds to share the burden.[63] Recent efforts to develop "green payment" schemes for replacing traditional federal farm programs deserve greater attention.[64]

J. *Consumer Acceptance and Public Attitudes*

It is hard to predict how industrialization will alter the public's view of the agricultural sector and the quality and safety of the food supply. Perhaps the claims of efficiency and lower prices will satisfy the public, especially a public with little understanding of agriculture. But several developments associated with industrialization could damage public attitudes of agriculture as they separate farmers from the land and continue the nation's movement away from a perceived "family farm" structure. Reliance on new techniques and inputs, for example genetic engineering of foods, raise related safety and ethical questions now being used by activists to attack agriculture.[65] Processors and marketers are often the forces urging the lessening of government regulation. The current debate over food safety, whether in the recent effort to delay the USDA's proposal on meat inspection, or the debate over reforming the Delaney Clause, illustrates how the desires of the food industry and the interests of consumers and producers are not the same.[66] Consumers want a safe food system and producers who raise quality products do not benefit when consumer confidence in food is adversely affected by health problems related to processing and marketing methods. Perhaps the public's response to industrialization will yield the surprising truth that consumers do not always want their food cheaper if the trade off is in quality or health risks or in damage to the environment or society.

III. AS INDUSTRIALIZATION DIVIDES US WILL A "NEW AGRICULTURE" EMERGE?

The longer range impacts of the trend toward an industrialized agriculture raise important questions for society. One question, put in academic jargon, is what will be the structure of a post-industrial agriculture? In other words, what is agriculture going to look like when it is done being industrialized? Will it be the efficient utopia of "super-farmers" noted by Urban and

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63. *See* Neil D. Hamilton, *The Value of Land: Seeking Property Rights Solutions to Public Environmental Concerns*, 48 J. SOIL & WATER CONSERVATION 280, 284 (1993).

64. The American Farmland Trust has played an important leadership role in identifying various ways to green the farm programs. *See* AMERICAN FARMLAND TRUST, AGRICULTURAL CONSERVATION ALTERNATIVES: THE GREENING of the FARM BILL (A. Ann Sorensen ed., Oct. 1994); *see also* Ralph Heimlich, *Green Payments as a Policy Option*, AGRIC. OUTLOOK, June 1995, at 21.

65. Controversy over the marketing of food containing genetically engineered components led to the creation of the Pure Food Campaign to fight FDA and EPA approval of such products. For a discussion of this development, see Hamilton, *supra* note 24, at 653-55.

66. *See, e.g.*, Marian Burros, *Congress Moving to Revamp Rules on Food Safety*, N.Y. TIMES, July 3, 1995, at 1.

other agribusiness executives—the agriculture of "Buck Rogers" where everyone drives their satellite guided tractors to "farm by the inch?"[67] Or will it be an agriculture increasingly dominated by the handful of companies that produce, process, and market our food, the companies who make the decisions and the profits while millions of workers toil for small wages?

Only time will tell what industrialization will bring, but from my viewpoint, the agriculture of tomorrow will have at least three main parts. The first will be the "industrialized portion," most notably like the broiler industry and any other forms of livestock or commodity production which follow this model. The role of traditional family sized "farmers" in this sector will be limited, reduced to "employee-like status" in an increasingly corporate-owned, concentrated, and vertically integrated system. In addition to industrialized firms, this sector will also include large family farms making much greater use of hired labor. This sector will account for the bulk of production, especially for grains and meats.

The second sector might be described as the mixed middle ground. This will be made up of the traditional family farms, perhaps larger than before, trying to compete, or at least exist, in the industrialized system. Producers will be using contracts to seek price premiums, but may also be increasingly linked in marketing cooperatives or networks. A common characteristic of these producers might be uncertainty about their future in agriculture. The question many farmers may face is "do I take the leap (and the debt) to become a mega-sized facility or do I get out now?" Older pro-

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67. One of the newest innovations poised to sweep through agriculture is the concept of "precision farming" which uses satellite based global positioning technology integrated with field level yield data to influence the application of various agricultural inputs such as seed and fertilizer. Many agricultural companies are very excited about the technology. *See, e.g.*, William Ryberg, *Deere Invests in 3 Research Firms*, DES MOINES REG., Dec. 16, 1993, at S8. Many farmers are also excited about the idea, although the actual profitability of the technology is still uncertain. *See, e.g.*, Joanne Welsh, *Dose of Reality*, TOP PRODUCER, Dec. 1993, at AC-1. The whole concept of "precision farming" appears to be a classic example of an industrialized agriculture's idea of a solution. To adopt the technology, a farmer would need to purchase four or five different forms of expensive and complex inputs, including the computer and software to run the programs, the global positioning system to indicate the position of equipment in the field, monitors to develop the field level data on yield variations, and planters or other equipment that will allow site specific modifications in application rates. All of this cost and investment would be designed to do something which many people would argue could be achieved by getting down off the tractor and walking through the field to identify variations in crop performance. There is not, however, a lot of new technology which is sold for people to walk and observe field performance. No doubt "precision farming" will be adopted by a portion of agriculture because it fits an increasingly industrialized system. A few of the reasons why it will probably be adopted, regardless of whether it makes economic sense, include the fact that many producers may be farming more land than they can care for using conventional means, farmers love new gadgets, farmers want to be perceived as technologically sophisticated and this is their chance to get on the information superhighway, and many agribusinesses will have something new to sell. Those are the ingredients for a sure fire winner.

ducers may be simply hoping to ride it out until retirement. For many farmers, a factor in their decision may be that the combination of economic pressures and changing societal attitudes toward agriculture mean that much of the fun and satisfaction has been taken from farming.

As an optimist, I see a third group of producers emerging. These are farmers devoted to producing and marketing quality food, often in ways which today might be considered nontraditional. This group will include smaller-scale diversified producers[68] and niche marketers, many working off farm as well, who produce and market high quality foods,[69] often for direct fresh consumption at higher prices.[70] These are the farmers who will sell wholesomeness and the traditional image of American agriculture[71] and who will reap a larger share of the consumer food dollar by doing so. Whether it is higher value foods such as organic produce,[72] specialty crops, or unique marketing methods, such as community supported farms,[73] these producers will be driven by an increasing attention to quality products and direct marketing.

One key focus of this group is in linking the consumers of foods and the producers who produce the food.[74] Another common concern is accept-

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68. For a thoughtful article concerning the important role of small farmers in the future of American agriculture from a well respected agricultural observer, see Gene Logsdon, *Get Small or Get Out!*, THE NEW FARMER, July/Aug. 1994, at 14.

69. *See, e.g.*, Boyd Kidwell, *Vegetable Growers Get Fresh with Consumers*, PROGRESSIVE FARMER, July 1995, at 24.

70. *See* Rich Pirog, *The Milkman Returns*, 7 LEOPOLD LETTER 6, 6 (1995) (discussing the increased demand for home delivery of milk products in New York City and how this exemplifies the "people/food relationship").

71. *See* Rod Smith, *Microfarmer, "Clean Foods" Could Reach 25% of Consumers*, FEEDSTUFFS, July 11, 1994, at 8 (reporting a prediction by Gerald Celente, president of The Trends Institute, that by 2015, "microfarmers" catering to consumer demand for high quality food production will have captured as much as twenty-five percent of the food market).

72. Creating a national market for organic produce was part of the justification behind inclusion of the Organic Food Production Act as part of the 1990 Farm Bill. *See* 7 U.S.C. § 6501 (1994). For a discussion of the effect and operation of the law, see Timothy J. Sullivan, *The Organic Food Production Act*, (pts. 1 & 2), FARMER'S LEGAL ACTION REP., Summer 1994, at 3, Autumn 1994, at 3. While the USDA is moving forward with efforts to implement national standards for the production and sale of organic food, as authorized by the 1990 farm bill, the organic food industry faces internal issues concerning the ethics of food labeling and marketing. *See* Molly O'Neill, *A Question of Ethics Confronts Organic Food Industry*, N.Y. TIMES, May 17, 1995, at B1.

73. For a discussion of the "community supported agriculture" idea which uses consumer subscriptions in the produce of a local farm, see Brian DeVore, *Sustainable Eating 101: The CSA Lesson*, 13 THE LAND STEWARDSHIP LETTER, Jan./Feb. 1995, at 1; Paul Rauber, *Food for Thought: Money Where Your Mouth Is*, SIERRA, July/Aug. 1995, at 16; and Thomas Brunner, *The Community Supports This Farm*, PROGRESSIVE FARMER, Feb. 1995, at 48. For a book on the subject of CSA, see TRAUGER M. GROH & STEVEN S.H. MCFADDEN, FARMS OF TOMORROW: COMMUNITY SUPPORTED FARMS, FARM SUPPORTED COMMUNITIES (1990).

74. *See, e.g.*, Peggy Knickerbocker, *Farming for the Love of Food*, 7 SAVEUR 60

ing responsibility for the quality of food they produce and for protecting the health of their land.[75] With these common characteristics and the potential for higher returns, these producers find optimism about their futures in agriculture.[76] They will fill the role of the traditional family farm—independent operators, concerned with stewardship of the land, taking responsibility for building strong local communities,[77] and preserving and honoring the history of agriculture[78] while creating their own future by raising and selling high quality foods locally.[79] For lack of a more original term, I call this develop-

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(1995) (discussing the food production system being established in the Tomales Bay region of California).

75. The issue of how the nation's food system relates both to personal health and the health of the environment, as well as our form of society, has become a more common subject in the nation's press. For example, the November/December 1994 issue of SIERRA, the magazine of the Sierra Club, was titled *The Plant on Your Plate: Saving the Earth Three Times a Day*, and featured a series of articles about the role of food and agricultural policy. *See, e.g.*, Paul Rauber, *Conservation á la Carte*, SIERRA, Nov.-Dec. 1995, at 42, (featuring American chefs who "cook by nature's rules").

76. For a valuable book, which explores many of the issues involved in the relationship between farming, agriculture, and food consumption, see ROBERT CLARK, OUR SUSTAINABLE TABLE (1990).

77. The "New Agriculture" group focuses on building strong "community food systems," which consider the full range of economic and social issues relating to food production and marketing, including issues of hunger and food availability. For a discussion of the recent efforts of such individuals to organize and to include the "community food security" concept in the 1995 farm bill debate, see *New Coalition Proposes to Recast Farm Policy Around Community Food Security*, NUTRITION WEEK, Jan. 27, 1995, at 1, and *Food Security Act Would Support Local Initiatives*, NUTRITION WEEK, Apr. 28, 1995, at 4.

78. The issue of preserving the pieces that make up our agricultural heritage is another important part of the new agriculture. The recognition of the importance of preserving the history of agriculture and using it to educate today's society about our food system can be seen in the work of such diverse groups as: the Seed Savers Exchange in Decorah, Iowa, which works to preserve heirloom varieties of fruits and vegetables; the American Livestock Breeds Conservancy in Pittsboro, North Carolina, which does similar preservation work with farm animals; and such living agricultural museums as Living History Farms in Des Moines, Iowa and the Museum of American Frontier Culture in Staunton, Virginia. Two recently published books eloquently reflect the human dimension in the appreciation of our agricultural heritage. *See* JOHN HILDEBAND, MAPPING THE FARM: THE CHRONICLE OF A FAMILY (1995); DAVID MAS MASUMOTO, EPITAPH FOR A PEACH: FOUR SEASONS ON MY FAMILY FARM (1995).

79. Another component of the "New Agriculture" concerns the role of chefs in educating consumers about food choices and creating markets for locally produced foods. In 1993 a group of the top chefs in America organized an initiative called "Chefs Collaborative 2000" with the purpose of working to advance "sustainable food choices for the next century." *See, e.g.*, Julie Mautner, *Culinary Camp-out: A Growing Group of Chefs Sets out to Change the Way Americans Eat*, FOOD ARTS, Oct. 1994, at 53. The Chefs Collaborative, now with hundreds of members, has established the following Charter and Statement of Principles to guide their actions:

Charter Preamble—We, the undersigned, acknowledging our leadership in

ment "The New Agriculture." Promoting the profitability of farmers who take this road offers some of the most exciting issues in public agricultural policy.

IV. CONCLUSION
THE ROLE OF PUBLIC POLICY IN A SEGMENTED AGRICULTURE

There are obviously many implications for public policy if such a segmentation of production should occur. From a legal standpoint, the industrial sector will demand regulation due to the possible economic, social, and environmental impacts such concentration of market power might have. This reexamination is already occurring, as reflected in the recent Justice Department investigation of companies in the corn milling industry.[80] As to the middle ground, in many ways it is this segment that is most threatened by industrialization, but it is also this segment for which most of current agricultural policies were written. The issue will be whether these laws, such as federal farm programs, retain relevancy or effectiveness in a changing agricultural structure. The "New Agriculture" deserves support through public policies because it is perhaps closest to the Jeffersonian agrarian ideals which historically shaped American agriculture.[81] It was a desire to aid small farmers

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> the celebration of the pleasures of food, and recognizing the impact of food choices on our collective personal health, on the vitality of cultures and on the integrity of the global environment, affirm the following principles . . .
> *Statement of Principles*
> 1. Food is fundamental to life. It nourishes us in body and soul, and the sharing of food immeasurably enriches our sense of community.
> 2. Good, safe, wholesome food is a basic human right.
> 3. Society has the obligation to make good, pure food affordable and accessible to all.
> 4. Good food begins with unpolluted air, land and water, environmentally sustainable farming and fishing, and humane animal husbandry.
> 5. Sound food choices emphasize locally grown, seasonably fresh and whole or minimally processed ingredients.
> 6. Cultural and biological diversity is essential for the health of the planet and its inhabitants. Preserving and revitalizing sustainable food and agricultural traditions strengthen that diversity.
> 7. The healthy, traditional diets of many cultures offer abundant evidence that fruits, vegetables, beans, breads and grains are the foundation of good diets.
> 8. As part of their education, our children deserve to be taught basic cooking skills and to learn the impact of their food choices on themselves, on their culture, and on their environment.

CHEFS COLLABORATIVE 2000, CHARTER AND STATEMENT OF PRINCIPLES.

80. *See, e.g.*, Kenneth Pins, *ADM Flap May Hurt Ethanol*, DES MOINES REG., July 27, 1995, at 7A.

81. Thomas Jefferson is considered by most historians as the principle architect of the American agrarian system. For a concise collection of Jefferson's writings on agriculture, see

which led to creation of many of the traditional agricultural institutions, such as Extension and the Land Grant system. Today, these institutions are struggling to adjust to industrialization and to define a continued relevancy for themselves in a changing agriculture.[82] Whether these institutions can be harnessed to support or recognize the "New Agriculture" is an open question. Failure to do so may mean that in an industrialized agriculture there is little need or justification for them.

In conclusion, it seems obvious that consumers have an unlimited capacity to "want their cake and eat it too"—in the form of plentiful, nutritious food produced in an environmentally sound manner by family farmers, but for lower prices. The farm sector's struggle to acquire a fair share of the price paid for food has been the historic quandary of farming. The irony may be that when agriculture is finally organized in a manner allowing it to demand or extract a fair share from consumers, as many believe is the ultimate goal of industrialization, control over food production will have slipped from the grasp of farmers. Only by aggressively asserting their interests to receive a fair price and profit for their production and using legal mechanisms to do so can American farmers ensure that "industrialization" is not simply the latest chapter in the decline of farming as the independent ideal cited by Daniel Webster in 1840 when he said: "Let us never forget that the cultivation of the earth is the most important labor of man. . . . When tillage begins, other arts follow. The farmers, therefore, are the founders of human civilization."[83] Perhaps the quotation by St. Paul inscribed on the USDA Building should be our guide: "The husband that Laboreth must be first Partaker of the Fruits."

Thomas Jefferson, Agrarian, in WAYNE D. RASMUSSEN, AGRICULTURE IN THE UNITED STATES: A DOCUMENTARY HISTORY 294-306 (1975). For an excellent biography of Jefferson by the undisputed dean of Jefferson scholars, see MERRILL D. PETERSON, THOMAS JEFFERSON AND THE NEW NATION: A BIOGRAPHY (1970). A study of Jefferson's writings on agriculture reveals the following tenets concerning the structure and operation of American agriculture that he envisioned: broad distribution of agricultural land ownership; open opportunities for people to enter agriculture; a diversified food production system at the national and enterprise level; agriculture as one of the main sectors of the economy, but in balance with commerce and manufacturing; a recognition of conservation and innovation in agriculture, e.g., crop rotation; agriculture as an outlet or expression of man's relation with nature; a reliance on new technologies, such as machines and seeds, which would increase production; and the goal of improvement of agriculture for human welfare.

Perhaps Jefferson's most famous quote about agriculture is: "Those who labor in the earth are the chosen people of God, if ever He had a chosen people, whose breasts He has made His peculiar deposit for substantial and genuine virtue." *Id* at 256. For a more contemporary discussion of the current vitality of Jefferson's agriculture, see Douglas L. Wilson, *The Fate of Jefferson's Farmer*, N.D. Q., Fall 1988, at 23. For a somewhat less enchanted perspective of American agrarianism but a thought provoking article, see Jim Chen, *Of Agriculture's First Disobedience and its Fruit*, 48 VAND. L. REV. 1261 (1995).

82. *See* Anne Fitzgerald, *Extension at a Crossroads*, DES MOINES REG., June 25, 1995, at 3G.

83. BRUCE BOHLE, THE APOLLO BOOK OF AMERICAN QUOTATIONS 154 (1967).