

THE ROLE OF LAW IN PROMOTING SUSTAINABLE AGRICULTURE: REFLECTIONS ON TEN YEARS OF EXPERIENCE IN THE UNITED STATES

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I. INTRODUCTION

For the last ten years, I have had the opportunity to be directly involved in efforts to promote “sustainable agriculture” in the United States. Since 1987, I have served on the Advisory Board for the Leopold Center for Sustainable Agriculture located at Iowa State University, one of the leading land grant agricultural research institutions in the United States. During that time, the Leopold Center has awarded over \$15 million in funds to support research, education, and promotion of sustainable agriculture. I have also served on two committees for the Board of Agriculture of the National Academy of Sciences addressing issues of sustainability. In 1992, the Committee on Long Range Soil and Water Conservation Policy published *Soil and Water Quality: An Agenda for American Agriculture*.¹ The ideas proposed in that book, such as using a watershed approach to address water quality issues and the promotion of field buffer strips to reduce water pollution, have in recent years been accepted as central features of American agricultural

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1. COMMITTEE ON LONG RANGE SOIL & WATER CONSERVATION POL’Y, SOIL AND WATER QUALITY: AN AGENDA FOR AMERICAN AGRICULTURE (1992).

environmental policy. Early in 1998, the Committee on Prospects and Opportunities for Sustainable Management of America's Nonfederal Forests published *Forested Landscapes in Perspective*.² Over the last several years, I have written several law review and journal articles addressing aspects of sustainable agriculture.³

I write this Essay from that experience, with the goal of sharing reflections on the important role which law and policy will play in promoting the development of truly sustainable agricultural systems. Sustainable agriculture is one of the most important developments in American agriculture in the last half century. It has the potential to be a unifying concept that can provide the basis for addressing both the environmental and the social needs of agriculture in countries throughout the world. For that reason, I commend the organizers of this Congress⁴ on selecting the issue of sustainable development as a theme for consideration. It will be impossible for any nation or the world to progress far on the path toward sustainable development if it does not examine agriculture. Sustainability must start from the ground up and agriculture is the place to begin. If food production systems and our relation to the natural resources we use to raise food are not grounded on the principles of sustainability, our future is in doubt.

II. DEFINING THE PRINCIPLES OF SUSTAINABLE AGRICULTURE

The first and perhaps most important step in promoting sustainable agriculture is to develop a common, understandable definition of the term. By doing so, the goals and objectives sought to be furthered by research and education efforts, as well as by law and policy, will become clearer. In the United States' experience, the process of defining sustainable agriculture was a long and sometimes acrimonious

2. COMMITTEE ON PROSPECTS & OPPORTUNITIES FOR SUSTAINABLE MGMT. OF AMERICA'S NONFEDERAL FORESTS, *FORESTED LANDSCAPES IN PERSPECTIVE* (1998).

3. A number of the ideas and themes reflected in this Essay are drawn from these earlier writings. The names and citations of these articles are: *Greening Our Garden: Public Policies to Support the New Agriculture*, 2 DRAKE J. AGRIC. L. 357 (1997); *Plowing New Ground: Emerging Policy Issues in a Changing Agriculture*, 2 DRAKE J. AGRIC. L. 181 (1997); *Reaping What We Have Sown: Public Policy Consequences of Agricultural Industrialization and the Legal Implications of a Changing Production System*, 45 DRAKE L. REV. 289 (1997); *Essay: Agriculture Production and Environmental Policy: How Should Producers Respond?*, 1 DRAKE J. AGRIC. L. 141 (1996); *Tending the Seeds: The Emergence of a New Agriculture in the United States*, 1 DRAKE J. AGRIC. L. 7 (1996); *Agriculture Without Farmers? Is Industrialization Restructuring American Food Production and Threatening the Future of Sustainable Agriculture?*, 14 N. ILL. U. L. REV. 613 (1994); *The Role of Law in Promoting Sustainable Agriculture*, 1 J. SUSTAINABLE AGRIC. 111 (1990); *Sustainable Agriculture: The Role of the Attorney*, 20 ENVTL. L. REP. [Envtl. L. Inst.] 10,021 (1990); *Adjusting Farm Tenancy Practices to Support Sustainable Agriculture*, 12 J. AGRIC. TAX'N & L. 226 (1990); and *Book Review: Exploring the Roots of Sustainable Agriculture*, 1 J. SUSTAINABLE AGRIC. 107 (1990).

4. The UMAU 5th World Congress on Agrarian Law was held May 19-21, 1998, in Porto Alegre, Brazil.

process. This was due in part to the fact that many people and institutions in agriculture originally viewed promotion of “sustainability” as a threat to their positions or markets. These fears over what sustainability might mean have largely disappeared and have been replaced by an increased acceptance of sustainability as a basis to measure both farming practices and agricultural policies.

Sustainable agriculture is defined in various ways, but in its simplest form, it means developing agricultural practices which protect the environment while preserving the economic profitability of farmers.⁵ The basis of the concept is that 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.⁶ These resources include both physical resources, of soil, air, and water, and also human and social resources of farm families, rural communities, and the economic structure necessary for an agrarian system to function. By focusing on how decisions affect the “sustainability” of agriculture, policies can be made which incorporate a concern for the environment. More importantly, by combining a concern for the environment with attention to the economics of farming, sustainable agriculture offers a way to harness producers' natural concerns for the profitability of their operations.

One statutory definition of “sustainable agriculture” can be found in Iowa Code § 266.39, which authorizes the Leopold Center, and that section defines the term as: “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.”⁷

For the last ten years, the United States Department of Agriculture (USDA) has funded research specifically aimed at these issues under the Sustainable Agriculture Research and Education (SARE) program. United States federal law defines sustainable agriculture as follows:

[A]n integrated system of plant and animal production practices having a site-specific application that will, over the long-term—

- (A) satisfy human food and fiber needs;
- (B) enhance environmental quality and the natural resource base upon which the agriculture economy depends;
- (C) make the most efficient use of nonrenewable resources and on-farm resources and integrate, where appropriate, natural biological cycles and controls;
- (D) sustain the economic viability of farm operations; and
- (E) enhance the quality of life for farmers and society as a whole⁸

5. See Neil D. Hamilton, *Feeding Our Future: Six Philosophical Issues Shaping Agricultural Law*, 72 NEB. L. REV. 210, 239 (1993).

6. See generally Neil D. Hamilton, *Sustainable Agriculture: The Role of the Attorney*, 20 ENVTL. L. REP. 10021 (1990) (discussing the developments and impact of sustainable agriculture).

7. IOWA CODE § 266.39(1) (1997).

8. 7 U.S.C. § 3103(17) (1994).

III. TO WHAT DEGREE IS AMERICAN AGRICULTURE MEETING THE GOAL OF SUSTAINABILITY?

Opinions are mixed on whether American agriculture is making progress on being more sustainable. Many commentators will tell you that we can do much more, which is true. But many parts of American agriculture are doing a much better job today than ten years ago. A combination of the federal soil conservation laws, public concern for environmental protection, and research and education on sustainable agriculture has led to many improvements. Farmers are adopting soil conservation practices and are considering alternatives for improving soil fertility and controlling pests. In that regard, the impact of public policies such as conservation compliance and efforts to fund sustainable agricultural research, such as the Leopold Center, have had an important impact.

In my home state of Iowa, the results from sustainable agriculture research on issues, such as how to reduce water pollution from the overuse of nitrogen fertilizer, are clear. For example, the average rates of nitrogen fertilizer used per acre in Iowa have dropped significantly in recent years without lowering crop yields. One effect is that Iowa farmers are saving millions of dollars in reduced fertilizer costs while also reducing the potential for excess nitrates to enter water supplies. Another effect is that if the environmental problems that bring attention to agriculture subside, such as public concerns for water pollution, then there should be less need to enact regulatory approaches that may increase the costs and restrict the freedom of choice available to farmers.

By merging economics and environmental stewardship, sustainable agriculture holds great potential for the United States and other nations. First, it may offer a way to reduce tensions between the environmental community and the farm sector, and it can help preserve consumer confidence in the quality of our food. In addition, it may provide a basis for justifying continued and even increased public funding of agricultural programs, such as expanded efforts to control water pollution and conserve soil. If farmers adopt practices to protect the environment, the negative environmental effects creating public pressure to regulate agriculture may decline. Law and policy will play an important role in helping any nation develop and promote sustainable agricultural systems. Identifying the legal tools and programs that will give life to sustainable practices is one important challenge. Equally important are efforts to identify the legal and institutional barriers, such as farm tenancy practices or agricultural lending attitudes, that might promote practices which negatively impact the environment and hamper the development of sustainable systems.

IV. LESSONS TO BE DRAWN FROM THE U.S. EXPERIENCE WITH SUSTAINABLE AGRICULTURE

Perhaps the most important insights that can be drawn from the American experience are the following ideas on how to most effectively develop and promote sustainable agriculture principles. First, it is important to develop commonly understood and accepted definitions of what is meant by “sustainable” agriculture. The role of definitions is essential, not just in helping clarify the goals to be promoted and in gaining support for the efforts, but also in trying to develop mechanisms to measure the effectiveness of any programs adopted.

Second, we must recognize that the communities affected by “sustainable” agriculture are much broader than just the farming sector. Many groups and institutions have an interest in and influence over agricultural policy. The research and education sector, farm groups, input suppliers, farm lenders, and landowners are among the important groups impacted by the type of agricultural policies in place. They are also important players in the successful promotion of any policy. These groups can either be allies in promoting sustainability or barriers to its adoption. The ability to gain their involvement is partially a function of whether they perceive that a shift to sustainable practices might threaten them. One important development within agriculture that magnifies the role played by these groups is the increased reliance by farmers and landowners on paid consultants to perform certain farming practices. For example, it is increasingly common for farmers to hire agricultural business, perhaps their own cooperatives, to apply pesticides and fertilizers. Crop consultants are commonly hired to conduct field surveys to determine when pest problems require treatment. The increased use of outside expertise, not necessarily from public agencies such as the USDA’s Cooperative Extension Service,⁹ is a factor that will determine how well any alternative farming practices identified by sustainable research are adopted.

Third, we must appreciate the fundamental role of education and research in providing the basis for sustainable agriculture. The concept of sustainability is an attractive ideal, but it will remain only an ideal unless actual practices and policies are developed to help implement sustainability in the fields. Farmers will not change how they produce crops in order to protect the environment unless they have knowledge and information about how the new practices will work and the effect these practices will have on their productivity and profitability. The ability to marry the twin concerns of respect for the environment and recognition of the need for profitability if any economic system to survive is one of the essential features of sustainable agriculture. That is why funding for research and education is fundamental to the efforts to adopt sustainable farming practices. A good example is the need to improve the testing and application of livestock wastes so that producers can take credit for the nutrients when making later fertilizer applications.

Fourth, it is important to identify the legal and institutional biases that influence agricultural practices. One basic theme of sustainable agriculture is to

9. These are informal education programs conducted in the United States in cooperation with the USDA. *See id.* § 3103(7).

promote adoption of farming practices which have fewer adverse impacts on the natural environment. Developing alternative practices that can be adopted is an important step in this process, as is developing better awareness and acceptance of the negative impacts common farming practices may cause. However, it is important to recognize that the availability of an alternative and the awareness of the current problems will not always lead to a change in how farming is carried out. There are a variety of other influences that help determine how and why agriculture functions. These influences include: the impact of land tenure practices, such as short-term leases that lock producers into exploitive land practices; the lending practices of agricultural financiers that may hinder the adoption of alternative methods of production or crop diversification; the attitudes of farmland owners who may desire a short-term maximization of returns rather than longer term stewardship of the land; and governmental programs that may encourage production of certain crops rather than more balanced systems. One of the key challenges in developing a more sustainable agriculture is for agricultural lawyers and policymakers to identify and work to reduce the impact these legal and institutional barriers may present.

Fifth, we must include within promotion of sustainable agriculture consideration for social and human needs. While most work in sustainable agriculture has been agronomic, it is important to recognize the important link between the economic and social structure of agriculture and developing sustainable agricultural systems. For any agricultural production system to be sustainable, it cannot just deal with soil and water or price and income. The system must also consider the farmers, their families, and the rural communities that make up the cultural structure of an agrarian system. If an agricultural system is to thrive, people must be in the equation because they 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 who want to build an economically viable operation through which to accumulate wealth and acquire the financial resources necessary 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 Iowa definition of “sustainable agriculture” refers to “social viability” and “appropriate use”; both clear mandates to include a structural component in discussions of sustainability.¹⁰ However, for many reasons, university and public research efforts find it difficult to address these cultural components. 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 encountering difficult “political” issues that are controversial in the agricultural community.

Sixth, it is important to accept the need for evolution and flexibility in public programs promoting sustainable agriculture. One of the central lessons of recent

10. IOWA CODE § 266.39 (1997).

years in the United States is a recognition that as the public acceptance of the importance of promoting sustainable agriculture grows, the publicly funded programs designed to do so will evolve. Much of the effort in the United States to limit the impact of agriculture on the environment involves paying farmers to promote soil conservation and limit water pollution. Programs such as the popular Conservation Reserve Program (CRP), which uses ten-year contracts to retire erodible land from production,¹¹ and the Wetland Reserve Program (WRP), which buys permanent conservation easements from farmers who restore wetlands on formerly drained fields,¹² are good examples of how sustainable agriculture is being promoted at the farm level. While these programs may not be specifically promoted as “sustainable agriculture,” the direct effect of the efforts clearly is to improve farming practices and protect environmental resources. Over the last ten years, the CRP has evolved to become more focused on environmental protection. The WRP was first developed in 1990 as a way to achieve more permanent restoration of valuable wetlands. It represents the first nationwide effort by the federal government to use conservation easements, which involve the public purchase of property rights on farmlands, to promote conservation. Both programs are proving to be popular with farmers and successful at protecting water quality.

Seventh, we must also recognize the role of natural systems as the foundation for promoting sustainable agriculture. When reduced to its essence, sustainable agriculture may simply mean developing farming systems that are more in harmony with nature than the conventional practices they replace. The idea of recognizing and working with natural systems was a fundamental principle in the writings of Aldo Leopold, whose book *A Sand County Almanac* and essay *The Land Ethic* have greatly influenced public officials responsible for promoting sustainable agriculture in the United States. The wisdom of using natural systems as a way to improve agriculture is being increasingly recognized and integrated into American conservation and agricultural policies. A prime example is the value of using a watershed approach to address water quality. While political jurisdictions may draw lines on the map, these often do not fit the manner in which water moves and is used. Using natural watersheds to create the legal jurisdictions necessary to effectively address water quality protection issues can help promote sustainability. Similar efforts are seen in the value of restoring wetlands, the need to preserve unique and prime farmlands, the treatment of groundwater and surface water supplies as interconnected, and using field buffer strips to improve water quality.

Eighth, using the food system concept is one way to make “sustainable agriculture” important to consumers. Today, we see increasing references to the term “food system” in discussion of the operation of America's agricultural sector.

11. See *Dollars for Wildlife in the Wetlands Reserve Program* (visited Nov. 5, 1998) <<http://ngp.ngpc.state.ne.us/wildlife/wrp.html>>.

12. See *Conservation Reserve Program (CRP)* (visited Nov. 5, 1998) <<http://www.ftc.nres.usda.gov/doc/nri/27.html>>.

The term is somewhat similar to “sustainable agriculture” in that it is new and perhaps not widely understood and appreciated. Ten years ago, it was a term rarely heard and, like sustainable agriculture, it does not have a fixed definition, but instead reflects the values participants bring to the discussion as well as the context of its use. The main objective of employing a food systems approach to consider agricultural issues is to recognize that agricultural production is only one part of a larger process, which encompasses an array of economic activities and policy considerations. By viewing farming and agriculture as only parts of a multi-faceted food system, broader public questions and the connections between “farming” and these other issues can be made clearer. Questions relating to opportunities for local food production, food access for the poor and hunger assistance, farmland protection, the public understanding of agriculture, and promotion of alternative markets are all included within a broadened “food system” focus. Employing a “food systems” model can build on the linkages that exist in the local economy and political system. It can also help local officials ask questions that might otherwise go unasked, such as what are the opportunities for increasing local production of food, should public institutions purchase more food locally, and how do land use policies affect the long-term protection of farming? Employing the food system as a method of inquiry is a natural evolution of our attention to sustainable agriculture.

V. CONCLUSION: HOW THE LAW CAN BE USED TO PROMOTE SUSTAINABLE AGRICULTURE

Let me conclude by summarizing several of the important opportunities that exist for agricultural lawyers and policymakers to promote sustainable agriculture. First, the concept of sustainability is not a separate item in agricultural policy debates over issues such as price, income support, and international trade. Instead, sustainability should be the organizing theme upon which policies are based and the standard against which their performance is measured. Second, efforts to promote sustainable agriculture will be largely dependent on information and research. If farmers can be shown alternative methods that protect the environment, as well as the economic viability of their operations, they will adopt them. It is vital that a significant increase in funding be provided for research on sustainable practices. Third, as part of the attention to sustainability, it is essential to incorporate the social and human issues relating to the structure of agriculture. The current drive toward industrialization of American agriculture, especially in livestock production, may threaten much of the present structure of agriculture that will be necessary to achieve sustainability. Of all the contradictions in American attitudes and policies toward agriculture, the most threatening may be the divergence between the traditional structure of agriculture, which is best suited by attitude and ability to protect the environment, and the structure we are putting in place through industrialization. The issue is whether the agriculture we are building can yield the harvest we desire.

Finally, an important force shaping American agricultural policy and the policies of all nations is the international dimension. The recent GATT accord on agriculture and the development of the World Trade Organization (WTO) have brought about significant changes in federal farm programs in the United States. While there are differences of opinion as to its impact, the GATT agricultural agreement clearly provides the authority and opportunity for countries to develop and fund conservation and environmental programs for agriculture.¹³ Whether the WTO will operate so as to support the promotion of sustainable agriculture or give dominance to promoting the economic values of increased trade at the expense of the environment is still to be determined. The recent decision against American efforts to protect endangered species of sea turtles during shrimp harvesting raises serious doubts about the sensitivity of the WTO process to environmental concerns. In the United States, existing farm programs are now the primary force for the “delivery” of soil and water quality protections. We face a critical challenge in determining how these goals will be achieved in the future if the current programs are dismantled, as scheduled for 2002.

There is no reason to expect public demands for environmental stewardship will disappear just because federal farm programs disappear. If farm programs do not exist, the public demand for environmental protection may most likely find expression in regulatory approaches to protect soil and water. If we miss this opportunity to take the money now used for price and income supports and convert it into internationally acceptable environmental and conservation programs, American agriculture will have missed the opportunity to make a rightful claim for public support to protect the environment. We, as a nation, will also have missed an important opportunity to promote sustainable agriculture.

13. See *Agreement on Agriculture*, Apr. 15, 1994, art. 21(12)(i), WTO Agreement, Annex 3 (visited Nov. 5, 1998) <<http://www.wto.org/wto/legal/14-ag.wp5>>.