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The Changing Politics of Agriculture and the Environment: What Role for Agricultural Economists?

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The issue of sustainability has swept over the political landscape. Low Input Sustainable Agriculture (LISA), alternative agriculture, sustainable development and related terms and concepts are showing up in draft legislation, competitive grant proposals, Extension Service Priority Programs, Natural Resource Council Reports, World Bank and the US Agency for International Development Directives, and articles in both the popular press and professional literature. The thesis of this paper is that this focus on sustainability reflects a coalescence of issues, including resource conservation, food and water safety, environmental quality, family-farm protection, and concerns about biotechnology, among others, into a drive toward a natural, environmentally benign, resource conserving, health promoting agricultural system. One of the key forces behind this coalescence is the realization that agriculture is part of the environmental problem.

Early environmental efforts concentrated on the relatively easy to pinpoint and control point sources. As progress was made in controlling point sources of pollution, the size of the nonpoint source pollution problem became clear, as did the realization that agriculture is the biggest nonpoint pollution source (Crutchfield and Algozin). Sandra Batie, in her 1988 presidential address to the Southern Association of Agricultural Economists, eloquently argued that agriculture is part of the problem and we must recognize that the problem is real. This message is also coming from people like US Secretary of Agriculture Clayton Yeutter, who in a recent interview published in the *Journal of Soil and Water Conservation*, said that water, air, and food quality, and the conservation of natural resources, are legitimate concerns and are high on the list of priorities at the Department of Agriculture (page 263).

As a result of this coalescence of diverse and often conflicting ideas, sustainability remains an ill-defined, amorphous concept similar to family-farm—no one really knows what it is or alternatively everyone has their

own definition—whatever the case we're all for it! As it is being used, sustainability comes close to being all things to all people, including those who argue that it's nothing new.

What is "Sustainability?" Can (Should) We Ignore It?

The National Resource Council (NCR) recently released a book titled "Alternative Agriculture." The task force responsible for writing the book produced the following definition of alternative agriculture:

The objective of alternative agricultural systems is to sustain and enhance rather than reduce and simplify the biological interactions on which production agriculture depends, thereby reducing the harmful off-farm effects of production practices. Alternative agriculture is any system that systematically pursues the following goals: (1) more thorough incorporation of natural processes such as nutrient cycles, nitrogen fixation, and pest-predator relationships into the agricultural production process; (2) reduction in the use of off-farm inputs with the greatest potential to harm the environment or the health of farmers and consumers; (3) greater productive use of the biological and genetic potential of plant and animal species; (4) improvement of the match between cropping patterns and the productive potential and physical limitation of agricultural lands to ensure long-term sustainability of current production levels; and (5) profitable and efficient production with emphasis on improved farm management and conservation of soil, water, energy, and biological resources (page 4).

This relatively precise and working definition emphasizes the substitution of information and improved management for chemical inputs.

E. T. York in his 1989 University of Georgia D. W. Brooks Lecture defined sustainability as "the successful management of resources for agriculture to satisfy changing human needs, without degrading the environment or the natural resource base on which agriculture depends" (page 6). York made two additional points that bear repeating. First, he argued that alternative agriculture groups—regenerative agriculture, organic farming, low input systems—do a disservice by trying to equate the terms low input, organic, and regenerative with sustainable. Sustainable agricultural systems will likely use less of some inputs but more of others and it is unlikely that purely organic systems will be sustainable on a large scale basis. Second, he argued sustainability is "not a passing fad or fancy," rather "this concept is basic and must guide our future thinking and policy direction" (page 6).

In her 1989 presidential address to the American Association of Agricultural Economists Sandra Batie delineated the concept of sustainable development. She reviewed its intellectual history, discussed its relationship to neoclassical economics, and analyzed the implications that it has for the agricultural economics profession. Batie concluded with

three points of particular relevance. First, she argued that the ambiguity of sustainability makes it exceptionally difficult to analyze its implications to the agricultural economics profession. Second, Batie noted that the concept is gaining disciples and is influencing politics and policies both in the United States and abroad. Finally, as an alternative belief system, Batie concluded sustainability challenges many economic concepts, tools, and assumptions.

One last view that underscores both York's and Batie's observations that sustainability concepts will influence government policies comes from the draft Farm Conservation and Water Protection Act of 1989 (U. S. Senate, 1989b). This Act, introduced into the Senate by Senators Fowler, Leahy, Gore, and Cranston, defined low input agricultural production system as "an agricultural production system and management strategy, designed for a family-sized farm that optimizes on-farm resources and minimizes the use of production items and practices with known or potentially adverse impacts on human health and the environment, while maintaining an acceptable level of production and profit from farming."

All of this begs for someone to write an article entitled "Who is LISA? and Why is she so Popular?" Now it turns out that LISA may even have a brother, BUBBA (Better Utilization of Biology and Business for Agriculture). Brother BUBBA obviously is related to LISA, but it reflects York's perspective that low input should not be a goal in and of itself.

The point of this discussion is that sustainability concepts are not well defined, and that many of the espoused goals are incompatible or not feasible. The profession, however, must avoid the temptation to reject these concepts as: (1) nothing new—many elements aren't new, as is obvious from the NRC definition of alternative agriculture, but some are and certainly the emphasis has changed, or (2) just a bunch of crackpots or extremists. Some are, but many aren't, and some carry enormous influence. At the very least, the emphasis on sustainability means it is not to be business as usual. In fact, this mind-set is more important than any specific definition. It is prevalent in the U.S. government, and is popular with consumer and environmental groups. As evidence: current LISA funding priorities, the NRC recommendation that \$40 million annually be set aside for research in alternative agriculture, and the general tenor of the proposed policy changes and funding proposals being debated in 1989 and 1990.

What are the Implications of this Sustainability Mind-Set?

The first and perhaps foremost implication is there are many inherent conflicts and tradeoffs embedded within the sustainability goals. Examining LISA funding objectives or the espoused goals of recent draft legislation reveals mutually exclusive if noble parts. The reasons for these conflicts are obvious when considering the myriad of issues that have coalesced into sustainability, including resource conservation, food and water safety, profitability, farm structure, and an adequate world food supply. Attainment of these goals will involve tradeoffs and will require solving difficult issues including externalities, valuing nonmarket goods, intertemporal and intergenerational tradeoffs, irreversibilities, lack of information and the resulting uncertainty and misinformation, and incompatibility with current US government policy.

The second implication arising from this coalescence is there are many players in the agriculture and environment game. As a result, the political environment in which agricultural legislation is written is changing rapidly. The drafting of the 1985 Food Security Act was the first time that traditional environmental groups were major players. In fact, they were the driving force behind most of Title XII which included the Conservation Reserve Program (CRP), sod and swampbuster, and conservation compliance provisions. Groups like the Audubon Society and the Sierra Club were able to link these environmental provisions to traditional agricultural concerns over soil conservation and income support. Today, sustainability issues are much broader than merely conservation. In a recent *Choices* article, William Browne reported that during the drafting of the 1985 Food Security Act, 215 organized interests produced policy positions and over 100 sent representatives to lobby Congress. In addition, 30 grassroots organizations had lobbyists in Congress as did many individual firms and specialty crop producers. In 1990, the numbers are even larger and the groups more diverse.

Environmental groups interested in the current farm bill debate, however, have split into at least three factions: 1) the 1985 group which wants to maintain the inside track left over from their earlier success (Audubon Society, Sierra Club), 2) the new, born-again environmentalists (Farm Bureau) that have sensed the changing political environment and worry about losing control of the agricultural agenda, and, 3) hard line food safety groups (Citizens for a Democratic Society)

who see an opportunity for taking control of the agricultural environmental agenda. The number and diversity of groups promises an intriguing spectacle.

What are the Implications for Policy?

To understand the political implications of this changing sustainability mind-set, we must understand the institutional context within which policy is formulated. Four institutional aspects deserve mention. First, agricultural institutions are older—conservation programs date back to the 1930s and the land grant system is even older. Environmental institutions on the other hand, are relatively young, dating only to the 1960s and many are much younger. As a result, there is a close-knit system of federal, state, and county institutions available to generate local technical assistance, research, extension, and education programs and to distribute cost-share funds on the agricultural side. Alternatively, relationships between EPA and state environmental and health agencies continue to be in flux as new environmental programs develop at both the federal and state levels (Zinn and Blodgett). This has led to confusion and debate about appropriate federal, state, and local roles in environmental protection.

The second institutional aspect is that, statutorily, the farm bill dominates agricultural resource issues, although the Federal Insecticide, Fungicide and Rodenticide Act is also under the jurisdiction of the House and Senate Agricultural Committees. In contrast, environmental legislation is fragmented into eight to ten major environmental statutes. Moreover, jurisdiction over these environmental statutes is scattered over four committees in the House, although the Environment and Public Works Committee oversees most of the environmental laws in the Senate. The jurisdictional differences are important for several reasons. First, traditionally the environmental and agricultural communities have fundamentally different concepts of the federal role in dealing with issues within their purview. Agriculturalists come from a tradition that emphasizes voluntary compliance and incentives (soil conservation programs); environmentalists come from a tradition of regulation (point source pollution). Second, agriculturists believe that food supply, productivity, and farm income considerations, should drive the debate. Environmentalists believe on the other hand that standards of environmental quality and food safety should be paramount. Finally, even within the environmental arena the agriculturalists' and environmentalists' agenda differ in scope and priorities. Zinn and Blodgett recently assessed

the agriculturalists' environmental agenda in order of importance as soil erosion, water supply, nonpoint-source pollution, and agrichemical pollution. Their assessment of the environmentalists' agricultural agenda in order of priority was non-point source pollution, groundwater contamination, pesticide regulation, water supply as it relates to salinity problems, wetlands preservation, and air pollution.

A third important institutional consideration is the shifting political power base. Only two percent of the population lives on farms and only one House district has as much as twenty percent of its voters made up of farmers (Zinn and Blodgett). As a result, agriculture is no longer viewed as being special—as a way of life—but just another industry. Agricultural interests are viewed with increasing skepticism by consumers and environmental interests, and vice versa. These concerns have spawned important debates over which committees will have jurisdiction over particular issues and specific pieces of legislation and thus, who will control the agricultural environmental agenda.

It is clear that agricultural policy is changing and is likely to change dramatically in the 1990 farm bill. A continued shift in the basic goals and relative priorities of agricultural policy from plentiful food supply and maintenance of farm incomes to protection of the resource base and environment and increased food safety is inevitable. Example provisions from various draft bills being circulated which may provide some insights into the types of changes likely to occur in the 1990 farm bill and related legislation include: 1) major changes in commodity policy including a broadening of the cropping provisions on base acreage, implementation of multiyear conservation and wildlife habitat set-asides, and CRP base protection, 2) enhancements of the conservation policy elements of the 1985 Food Security Act including a wetland protection and restoration program and a broader eligibility, reorientation, and perhaps increased acreage for the CRP, 3) the addition of major new environmental components including well-testing programs and development of groundwater protection plans such as wellhead protection and Wellbusters, 4) provision of large research funds earmarked for LISA and establishing a sustainable agriculture initiative within the Extension Service, and, 5) the establishment of formal standards and certification procedures for organic foods. In a related vein, budget concerns reflected in terms like "no net cost" and "budget neutral" portend a shift toward regulatory (polluters pay) approaches and away

from costly incentive programs. This trend will be reinforced by changing politics and the view that agriculture is part of the industrial complex.

One final institutional consideration that is not appreciated is the growing importance of implementation of legislation as opposed to the writing of the legislation. This issue came into focus with the 1985 Food Security Act. Nearly every second paragraph left a key definition (for example, highly erodible land), a specification of rules (bidding procedures for the CRP), or the decision to carry out a particular provision (multi-year set aside program) up to the discretion of the Secretary of Agriculture. These critical issues were hammered out after passage of the Act by a battery of task forces made up primarily of USDA staffers who met over a period of several months. This step in the process provides an opportunity for agricultural scientists to play a major role in shaping agricultural policy. Where agriculturalists can maintain control of the agenda (that is, legislation under the jurisdiction of the House and Senate Agriculture Committees), this "Secretary's discretion syndrome" will likely become more prevalent. The argument being that the only way to get the legislation passed with so many groups involved is for the groups to compromise on the general programs and provisions and agree to let the Secretary hammer out the specific provisions as the rules are drafted. This trend is supported in the wording of the draft Farm Conservation and Improvement Act of 1989 (U.S. Senate, 1989a). On the other hand, where the agenda is captured by the environmental interests, the discretion left to the Secretary of Agriculture will be reduced. Then, the need for scientific input into the process will be unchanged, but it will probably be more difficult for agricultural scientists to gain access to the process.

What Role for Agricultural Economists?

An important role for agricultural economists is to help clarify the issues and focus the debate. Much of the environmentalists versus economists (agriculturists) rhetoric results from a basic confusion about the precise issues being discussed. There are three fundamentally different levels of policy issues: 1) specification of the proper weights on alternative social goals (for example, environmental enhancement versus defense spending) in the social welfare function, 2) specification of the appropriate distribution of income across various segments of society, and, 3) determining the most efficient means of obtaining a specific objective.

Economists can bring the concept of opportunity costs (tradeoffs) to discussions about the social goals and priorities (level one debates). Beyond that we represent just one more player. Much of the environmentalists versus agriculturalists confusion arises because environmentalists focus more on social welfare (level one) issues, where agriculturalists focus more on efficiency (level three) issues. As a result, economists often argue that a tax is the most efficient means of reducing pollution and outraged environmentalists respond that a tax legitimizes certain levels of pollution and fails to appropriately stigmatize polluting behavior. Resolution of level one debates is a social issue manifested in the political arena.

Economists have a bigger role to play in debates about how to allocate income and scarce resources (level two debates). Welfare economics and property rights analysis can be brought to bear in determining the welfare implications of alternative distributions of income as well as pointing out means for achieving income redistribution.

The most familiar role of agricultural economists is to point out alternative means of achieving specific goals. In this context, various measures of efficiency are relevant, including benefit/cost analysis, cost-effectiveness comparisons, and energy efficiency comparisons. In this role we are often called on to propose alternative approaches for achieving particular objectives and to evaluate the effectiveness of alternative policies.

In a similar vein, recent events in the Soviet Union and East Bloc provide classic economic lessons on the importance of private incentives and of the information exchange efficiency of markets. Economists have long recognized that private economic incentives (Smith's invisible hand) are crucial. Relying on a person's good intentions (Boulding's "heroic man"), though potentially a powerful force, has limits. Likewise, no manner of scheduling or organization of economic processes can approximate the efficiency of a competitive market. However, it is also important to recognize those cases where the market fails (externalities, nonmarket goods, intertemporal and intergenerational tradeoffs) and work to devise appropriate incentives and institutions in those cases.

Agriculturists also have an important educational role to play. Uncertainty resulting from inadequate information or misinformation often leads to safety-first types of extreme behavior. In some cases of extreme uncertainty this type of behavior is often desirable. In other cases, comments like bovine somatotropin (BST) is "crack for cows," or rep-

resents the production of "hormone laced milk," are clear cases of misinformation that obscure the real issues. Agricultural scientists have an important responsibility in both cases to delineate the issues and to express them in a way that the public can grasp the real tradeoffs and understand the uncertainties involved. However, to do this, we must have credibility with those whom we wish to influence. "Credibility comes with knowledge, integrity, and demonstrated efforts to 'do the right thing'" (Carriker, page 6). Agricultural scientists must also carry back to the agricultural community the message that environmental problems are real and that the political realities are changing. Agriculture is part of the problem. If we want to be part of the solution we can't be apologists for agriculture.

Finally, there is an important research role for agricultural scientists. Research is needed in the areas of: 1) production system design and management, 2) policy analysis, 3) basic process analysis of production—resource—environmental interactions, 4) broader scale analyses of regional development strategies, and, 5) global interactions between agriculture and the environment. Each of these areas offer challenges—many of which will require multidisciplinary approaches and will force us to work on a broader scale.

Conclusions

The sustainability issue is real. It reflects a coalescence of diverse ideas into a new national mind-set. As a result, the political environment is changing and agricultural policy is likely to change dramatically in the 1990 farm bill and related legislation. Agriculturalists and agricultural scientists need to recognize these changes. Agriculture is indeed part of the problem. We can't afford to be apologists for production agriculture and risk our credibility. There are too many critical problems that need to be solved.

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