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# A CHOICES Dialogue on Mandated

## IT'S A DILEMMA

by Dana L. Hoag and E. C. Pasour, Jr.

Supporters of sustainable agriculture scored a number of victories in the Food, Agriculture, Conservation, and Trade Act of 1990, i.e., the 1990 Farm Bill. Arguably, one of the most important could be the requirement that Extension Service agents be trained in sustainable agriculture "in order to develop their understanding, competence, and ability to teach and communicate the concepts" to farmers and others. The mandated education program suggests that sustainable agriculture is socially beneficial and should be adopted.

However, a mandated education program based on current knowledge about sustainable agriculture could compromise the objectivity of the Extension Service by, in effect, forcing its agents either to advocate a farming system which has inadequate research support or to look and act "politically correct" while conducting business as usual. In the following analysis, we discuss questions about sustainable agriculture that inevitably will arise as the Extension Service designs and implements the national training program.

The legislation is comprehensive in coverage. It requires that all Extension Service agents complete a training program by November 1995, and after November 1993 all new agents must complete training within 18 months following employment. However, the 1990 Act is less clear as to how the training is to be done; it does not make clear where agents will be trained and who will train them. Competitive grants will be awarded to establish at least two regional training centers, but no new facilities are to be constructed. The law does not exclude the possibility that agents could be trained outside the centers.

The 1990 farm bill is forthright as to the goals of this \$20 million a year training program. Each state is required to provide Extension Service agents with information that will assist in developing farmer-to-farmer information exchange networks; promote farm tours and field days; promote farmer input into research and extension programs; provide technical assistance—especially in environmentally sensitive areas; provide information on water and nutrient management; and provide information concerning whole-farm management systems. There are a number of basic questions and problems that must be resolved before an educational program designed to enable Extension Service agents to understand and communicate sustainable agriculture concepts can be effective.

### What Is Sustainable Agriculture?

Sustainable agriculture is known by a variety of other names such as regenerative and alternative agriculture, but there is no consensus on the meaning of sustainability. As C. Robert Taylor put it, "There seem to be as many definitions of alternative agriculture as there are proponents and opponents." However, the following definition of sustainable agriculture from the U.S. House of Representatives conference report on the 1990 Farm Bill is typical of most people's definition. In this report, sustainable agriculture is defined as: "an integrated system of plant and animal production practices having a site-specific application that will, over

the long-term: (1) satisfy human food and fiber needs; (2) enhance environmental quality and the natural resource base upon which the agricultural economy depends; (3) make the most efficient use of nonrenewable resources and on-farm resources and integrate, where appropriate, natural biological cycles and controls; (4) sustain the economic viability of farm operations; and (5) enhance the quality of life for farmers and society as a whole (p. 1055)."

Broad support for sustainable agriculture has been generated by its sweeping promises—to enhance environmental quality, to make the most efficient use of nonrenewable resources, to sustain profitability, and so on—that have a popular appeal but which are difficult to monitor objectively. Aside from being somewhat vague, these objectives are frequently inconsistent. For example, there is often, but not always, a tradeoff between protecting the environment and profitable production. In such cases, sustainable agriculture theory offers virtually no guidance in determining socially optimal production and marketing practices since consensus is lacking concerning the social values of the laudable but conflicting goals.

The House report's version notwithstanding, the lack of a generally accepted definition of sustainable agriculture is not a trivial problem. Most farming systems currently in use already meet one or more of the sustainable agriculture objectives; how many must be met for a system to be considered sustainable? Furthermore, how is sustainability to be determined when an increase in environmental quality is accompanied by lower farm profits or higher product prices, which decrease a consumer's ability to satisfy "food and fiber needs?" Unless an innovative system can enhance at least one sustainable agriculture objective without having a detrimental impact on any other, the economic techniques of analysis cannot determine whether the proposed new environmentally friendly system is an improvement over chemical dependent systems of farming. The Extension Service can train agents about the importance of economic and environmental tradeoffs of alternative farming systems, but how is this different from traditional economic analyses?

In short, there is no agreement as to how to differentiate between farming systems that are sustainable and those that are not. It is not our purpose to develop an objective definition of sustainability—it remains to be shown that such a definition can be developed.

### What Is New In Sustainable Agriculture?

What is it, if anything, that makes sustainable agriculture different from traditional agriculture? The agricultural production techniques commonly mentioned in sustainable agriculture, including integrated pest management (IPM), best management practices (BMPs), soil conservation, manure management, water quality programs, soil testing, and similar practices have been around for a long time.

Patrick Madden, a leading proponent of sustainable agriculture, maintains that it is "holistic, treating the whole farm as an integrated system, while recognizing the need to improve the various parts or components." In a Madden Associates report on USDA low input sustainable agriculture (LISA)-funded projects, Madden states that techniques such as integrated pest management and best management practices, as opposed to sustainable agriculture, "deal only with specific parts of the total farm management challenge."

Madden's distinction does not hold up when one looks at cur-

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rent research in sustainable agriculture. For example, LISA projects funded under the 1985 Food Security Act covered a variety of individual practices, including production of cover crops, ridge tillage without herbicides in Midwest corn, manure management, use of green manures, and control of weeds with allelopathic (growth-inhibiting) crops such as rye. All of these projects deal only with individual components of agricultural production and none meet Madden's definition of "holistic." Moreover, these projects involve almost no production practices that have been developed since the sustainable movement began. Although sustainable agriculture supporters cite examples of holistic systems, such as the widely publicized Thompson farm in Iowa, one would be hard pressed to show that any of the 109 projects funded by USDA between 1988 and 1990 were "holistic" in the sense of treating the entire production unit as an integrated system.

### Knowledge Is Limited

Projects funded under the sustainable label emphasize the importance of the question: What will agents be taught in the mandated training program? Agents have already been informed, at least to some extent, about IPM, BMPs, water quality management, nutrient management, food safety, and the like. Research on LISA and other variants of sustainable agriculture has provided little new information to justify the increased emphasis on sustainable agriculture. Indeed, research studies all across the country consistently show sustainable agriculture systems (as self-defined by the project researchers) to be less profitable. Perhaps researchers someday will discover that there are economic or other gains from the symbiotic relationships in an "integrated" system, or changes in prices, new technology, or other forces will make more sustainable systems profitable. However, in the absence of such new developments, there is little evidence to support the claim that farmers generally can increase or even sustain profits through the adoption of sustainable agriculture.

Sustainable agriculture practices that are unprofitable might still be socially beneficial if externalities associated with conventional farming are sufficiently large. But very little is known about the level or value of off-site costs that would be prevented or reduced with the adoption of sustainable agriculture practices or production systems. In addition, the policy control mechanism used to internalize the externalities will create problems. These effects must be taken into account in determining whether sustainable agriculture is socially beneficial.

### Adoption Will Be Slow

Most commercial farmers are unlikely to adopt voluntarily a set of production practices that reduces profits. Indeed, additional information on the costs and benefits of sustainable agriculture is likely to *decrease* rather than increase its acceptance by farmers. A recent study done in North Carolina, for example, showed that farmers, classified as sustainable agriculture on the basis of reduced chemical farming practices, had less farm experience, relied less on Extension agents for information, and had lower farm incomes. The results do not bode well for educational efforts in sustainable agriculture. As Anderson, the author of the study points out, if these farmers' production choices are rooted in values that are not shared by most farmers, then making more technical information available or removing policy barriers will not be sufficient to effect widespread changes in farming practices.

Granted, a small proportion of producers might be able to maintain or increase farm profits with sustainable agriculture systems by catering to a segment of the market willing to pay premium prices for food and fiber that meet sustainable agriculture "stan-

dards." But it remains to be shown that consumers generally are willing to pay higher prices for agricultural products produced under production conditions that meet sustainable agriculture standards, in whatever way the concept is defined.

### Dubious Policy

An effort by the Extension Service to promote sustainable agriculture is dubious public policy for several reasons. First, the effort will be ineffective. The legislation mandating a training program implicitly assumes that current producers would adopt sustainable systems if they were better informed. This assumption is highly questionable. The evidence suggests that U.S. farmers tend to adopt production practices that have proven to be most profitable given the institutional and financial constraints faced. In short, the primary factor limiting the expansion of sustainable agriculture appears to be lack of profitability—not lack of information.

If spillover costs of current farming practices are sufficiently high as to warrant changes in production, it is likely that changes in farming practices will have to be achieved through other institutional means rather than through education. Indeed, in a competitive industry, adopting a system that is less profitable will mean economic failure for marginal farmers. Consequently, attempts to persuade farms voluntarily to adopt farming practices that reduce profits predictably will fail.

Second, the Extension Service cannot teach sustainable agriculture because the concept, as shown above, is loose and imprecise. It is not realistic to expect Extension Service agents to provide information to farmers about this subject when researchers in Land Grant universities and the USDA cannot even agree on the definition or meaning of sustainable agriculture. This will, of course, not prevent agents from teaching farmers about production techniques commonly identified with sustainable agriculture, but this falls far short of the educational mandate.

Third, attempts to foster the adoption of a farming system that has conflicting goals and is less profitable will undercut the credibility of the Extension Service. It is unrealistic to expect Extension Service agents to promote a system of farming that reduces profitability, just as it is unrealistic to expect that farmers will voluntarily adopt such a system.

What are the implications for agricultural economics? Agricultural economists have a responsibility to provide information about the effectiveness of government farm programs. We do not deny that an educational program can provide information about production techniques, such as IPM and BMPs, commonly identified with sustainable agriculture. Such a program, however, will not achieve the mandate of the farm bill, which is to enable Extension Service agents to understand and teach others how to achieve sustainable systems of agricultural production. Agricultural economists can make an important contribution to the public policy debate by emphasizing the potential problems and pitfalls for the Land Grant college system in supporting sustainable agriculture, a concept that has not been clearly defined and whose economic, environmental, and community value remains to be demonstrated.

Perhaps the Extension cart is simply before the research horse. **G**

### For More Information

"Farming With Reduced Synthetic Chemicals in North Carolina," by M. Anderson in *American Journal of Alternative Agriculture*, Vol. 5 (1990): pp. 60-68.

*Perspectives on Alternative Agriculture*, by C. R. Taylor in *Agricultural and Resource Policy Forum*, Auburn University College of Agriculture, Vol. 2 (1990).