



## Sustainable Agriculture: Only Goals, Not Definitions

Victoria Mundy

Every agricultural professional, including every farmer, has struggled with the definition of the term "sustainable agriculture." To define something is to "limit" or "end" it, according to Webster's. And perhaps this is why sustainable agriculture is apparently an elusive idea -- the diversity of people involved in agriculture makes such limitation impossible. Any farm fits somewhere on the continuum of sustainability.

The endless debate about the definition of the words has not prevented some farmers and food buyers from changing their actual production and consumption practices, though. This paper approaches the concept of sustainable agriculture from the perspective that the name is only a name. What is important are the *results* of practices which farmers use and choices which consumers make.

Policy makers, consumers, marketers, processors, researchers, and farmers all make choices. It is argued that the essence of sustainability is careful consideration of every decision toward the balanced support of long-term benefits to society as a whole -- and for the individual making the choice.

### What Sustainable Agriculture Is Not

Since sustainability is and surely will remain an evolving concept, writings which describe what sustainable agriculture is should probably include mention of what sustainable agriculture is not. Following is a discussion of some common problems with the concept, or at least with the name, "sustainable agriculture."

### Is not strictly organic production

Sustainable agriculture certainly began with the organic movement. Organic farmers and gardeners were vocal in their concerns about environmental damage which resulted from heavy chemical use and the abuse of soil. They were adamant that agriculture had to change its ways in order to protect natural resources and human health. This group has very strong ideals concerning acceptable practices for the stewardship of the land.

Over the past twenty years, many people have come to believe that chemicals have an important place in land stewardship -- but that chemicals must be used with great care and after thorough consideration of other alternatives. For instance, "sustainable" farmers would not use chemicals as preventive treatments for pest and disease problems associated with long-term monoculture production. They would use chemicals to treat an outbreak of a particular pest, if they could not find another way to deal with the problem.

### Is not "going back" to the way it was in the 1930's

Some people dismiss the concept of sustainable agriculture with a contemptuous sniff that its supporters would have rural America return to the state it was in before World War II. This vision is not only impossible to achieve, it is completely undesirable. Proponents of sustainable agriculture have no wish to recreate the drudgery and danger of pre-conventional subsistence agriculture. Instead, one goal of sustainable agriculture is to create rural communities in which people enjoy safety, leisure, and find a high quality of life.

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## **Is not rejection of new technologies or "conventional" practices**

Some farmers may actually not use some new technologies as they manage their farms for sustainability. But such rejection is not a thoughtless reaction to new ideas. Ideally, sustainable farmers make decisions about technology by thoroughly weighing the costs and benefits associated with each technology. Some farmers might decide that a certain technology -- such as Roundup Ready Soybeans™ -- will help their operation on the road to sustainability, while others might choose not to use the tool, for the same reason. Likewise, common production practices are not rejected out of hand, but options are considered carefully.

## **Is not solely the responsibility of farmers**

Within the last ten years or so, people have come to realize that farmers cannot be held solely responsible for changing agriculture (Flora, 1994; Hesterman and Thorburn, 1994). The webs of agricultural decision-making are complex. Farmers must respond to regulations, to markets, to the limitations of their own skills, to their land, and to the weather -- at the very least. And only one of these factors, skills, is directly within a farmer's control. Farmers cannot and should not be asked to bear the burden of sustainability alone. Everyone eats. Everyone is responsible.

Farmers and food processors do not have short-term economic incentive to develop sustainable methods fully. Therefore, food is more expensive at the grocery store when it is produced and processed in ways which are designed to protect the environment and people. But we all do pay for environmental and social damages -- through our taxes. We pay now, whether we realize it or not, for pollution and other damage. Our political system and food system deal with problems after they have become disasters: massive manure lagoon spills in North Carolina are a good example. Emergencies are expensive.

Our society values a clean, natural environment and stable communities. In order to have these things, people who use agricultural products must create and support markets for products which are raised and processed in a way which protects land and people. People must also create and support political structures which encourage sustainability. This is not at all easy, but in the long run it is better than responding to crisis after crisis.

## **The Accomplishments of Agriculture**

Since about 1945, American agricultural methods have been spectacularly successful in two ways. They have produced massive amounts of raw materials for an incredible diversity of uses, and greatly reduced labor for farmers. But few people could honestly argue that these successes have not been coupled with environmental failures, including the exploitative use of non-renewable resources.

No one is very sure what the social consequences of agriculture's massive raw material production and reduced labor might be. One classic study did show, though, that a community surrounded by many family farms was a more desirable place to live than a community in the same state which was surrounded by a few very large farms dependent upon low-wage labor (Goldschmidt, 1968). Research has not yet been done to show the impact of this type of farming on other social effects such as rural-to-urban migration and problems which cities face. Clearly, though, the structure of agriculture does affect society (Lasley et al., 1993).

Today's "conventional" agriculture has some distinctive characteristics which support its successes and its problems. These characteristics include monoculture, specialization, high material inputs of all kinds, and high consumption rates of diverse end products. When people began to develop and adopt the production, processing, and distribution methods which created these characteristics, they acted in good faith, using the best information they had. No one knew what the results would be.

But now people do know something about the consequences of depending upon agricultural production and consumption systems with those particular characteristics. A few of those consequences are erosion, groundwater contamination, chemical contamination of soil, food, and water, loss of genetic diversity, and consolidation of wealth. This paper is not intended to document or discuss these problems in detail.

## **Accomplishments of Sustainable Agricultural Systems**

What does agriculture, which for the purpose of this discussion includes all facets of agribusiness, need to accomplish in order to support global and local society for

more than the "foreseeable future"? A group of people who came together under the auspices of the W.K. Kellogg Foundation proposed a summary:

### **Characteristics of desirable food and farming systems**

- \* Make them resource-efficient;
- \* Allow them to maintain productivity and profitability;
- \* Protect the environment and human health;
- \* Support rural communities;
- \* Provide increased opportunities.

Most people will agree that these goals are valuable (Hesterman and Thorburn, 1994). It is hard to object to wise resource use, profit, health, equity, and enterprise.

None of these goals is mutually exclusive. In fact, they are interdependent. One goal might be more important than another at times, but never can one be sacrificed for another. For example, no amount of capital inflow will support a rural community if environmental damage resulting from that particular type of capital inflow makes the town unfit to live in. For another example, conservation of fossil fuels tends to protect the environment and human health, since many pollutants are derived from fossil fuel.

Four of these points deserve some clarification. Resource-efficient food and farming systems will strive to use only the amount of energy for production that can be replaced by photosynthesis or other renewable energy sources. Dependence upon non-renewable energy sources is clearly short-sighted; easily obtainable supplies of fossil fuel will not last forever. Furthermore, do we really want to spend money, time, and labor to find source after source of fossil fuel, each of which will eventually fail us?

A second point of resource efficiency has to do with soil and water. Difficult as it may be, truly resource-efficient agricultural systems will strive to conserve soil and groundwater to the point that these resources are not lost more quickly than they regenerate. "Surely, though," some people say, "science will find ways to produce food without these resources." The paper does not argue that such technology cannot and should not be developed -- we may well need it as our population burgeons -- but we would be ill-advised to deliberately waste assets we already have.

This paper takes the position that maximum short-term financial profitability and productivity must not dominate decision-making in agricultural systems to the exclusion

of long-term values, including long-term profitability and productivity (Lockeretz, 1989). But, the profitability of agriculture must be maintained at a level which will keep agriculture attractive to people who produce, including the agribusiness sectors.

It is not fair or realistic to expect agricultural producers to provide goods which furnish a high standard of living for everyone but themselves. We need agricultural goods; we must furnish incentive for people to produce them. Furthermore, we must provide incentive for people to produce these goods in a manner which fills our desire for a clean environment and for stable communities.

Farmers themselves, even large farmers who buy and sell far away from the local markets, consider that rural communities are vital for the functioning of their farms and vice versa (Allen and Bernhardt, 1992). Agricultural systems must provide agrarian rural communities with income which does not leave the area, but which provides health care, education, recreation, and the multitude of other services which people in more populated areas enjoy. Otherwise, people leave rural places, especially young people. In doing so, they leave agriculture.

Along with providing a decent quality of life in rural communities, agriculture must create opportunities for people. Community members must be able to work, or they will leave. Furthermore, farms and agricultural industry can create lasting jobs. People eventually may not want any more cars or televisions (hard as that may be to imagine) but people will surely always want food.

Consumers are a driving force behind agricultural systems which meet these goals of wise resource use, profit, health, equity, and enterprise. We vote with our dollars and with our support of policies which either encourage or discourage particular agricultural methods. If we do want food, clean air, clean water, natural spaces, and rural communities, then we must act to have them.

### **Integrated Farming Systems - An Evolution**

What tools are appropriate for agriculture, as an entire system, to use in achieving these desirable goals? Figure 1 illustrates the progression of agriculture from using few tools to using many tools. Notice that in no part of the picture are such characteristics of agriculture as high yields, chemical use, and conventional production practices lost. Instead, other tools are added. The added tools tend to be those which are themselves supported by rural communities, farmers, consumers, and social capital

of all types rather than financial capital or the exploitation of natural resources.

### Conclusion

This paper purposefully did not define the term "sustainable agriculture," nailing it down to a set of practices or assigning it as the responsibility of one group of people. Instead, sustainability is described as a set of perpetual goals for which agriculture systems, including farmers, agribusiness sectors, and ultimately consumers, can strive.

"Agricultural sustainability will require changes far more significant than simply fine tuning the environmental and social constraints of the profit maximizing model of economic efficiency. History will quite likely reveal the most significant aspect of the sustainable agriculture movement to be the emergence of a new mental model, mind set, or paradigm for decision making." (Ikerd, 1997).

Change is not easy. But the alternative to trying is to concede that we value cheap food and goods -- cheap in all senses of the word -- more than we value our future.

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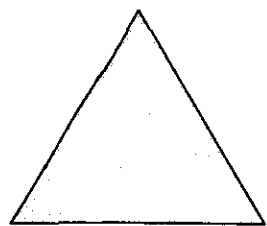
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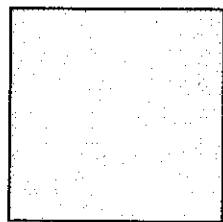
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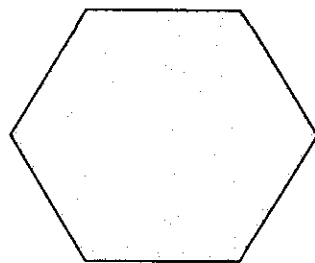
Figure 1. *INTEGRATED FARMING SYSTEMS*



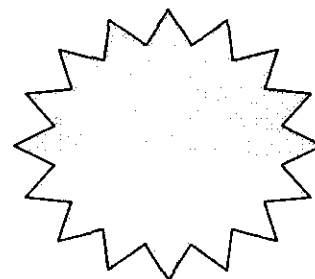
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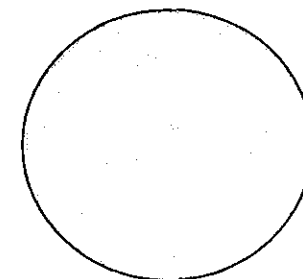
High Yields  
 Specialization  
 Crop Rotations  
*Herbicides*



High Yields  
 Crop Rotations  
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 Herbicides  
*Family farms*  
*Conservation*  
*IPM*  
*Cover crops*



High Yield  
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