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ALTERNATIVE AGRICULTURE IN THE UNITED STATES:  
RECENT DEVELOPMENTS AND PERSPECTIVES

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INTRODUCTION

For the first half of this century, most farms in the United States were mixed crop-livestock operations. Farmers produced forages and feed grains for their animals through long-term crop rotations which required minimal purchased inputs. Soil productivity was maintained by crop rotations, including nitrogen-fixing legumes, and the return of crop residues and animal manures to the land. Few pesticides were used. Weeds, insects and plant diseases were controlled mainly through crop rotations, mechanical cultivation, and biological means such as natural predators.

From the 1950's onward, U.S. Agriculture became more specialized and dependent on purchased inputs of synthetic chemical fertilizers, pesticides, energy, and credit. The availability of low-cost fertilizers and pesticides allowed farmers to shift from crop rotations to monoculture cash grain crops which significantly increased their net returns.

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Government programs and farm subsidies reduced the risk of specialization. Livestock were often excluded from these systems and confined to commercial feedlots.

Consequently, farmers that specialized in cash grain production often had to increase their inputs of chemical fertilizers and pesticides to compensate for the lost benefits of crop rotations and animal manures. This, in turn, has led to many of the problems and growing concerns about U.S. Agriculture, including excessive soil erosion, loss of soil productivity, pollution of surface and groundwater by agrichemicals, and doubts about food safety and quality.

#### ALTERNATIVE AGRICULTURE AND RELATED TERMINOLOGY

A number of terms and definitions have emerged in recent years that refer to a spectrum of low-chemical, resource- and energy-conserving, and resource-efficient farming methods. For example, words such as "biological," "sustainable," "ecological," "regenerative," "natural," "biodynamic," "eco-agriculture," and "resource-efficient" are specific terms used by certain advocates and groups to refer to various alternative agricultural production practices and technologies that, they feel, are essential to the development of long-term sustainable farming systems. The more general terms that have come to be most widely used during the last decade are "alternative," "sustainable," "organic" and "low-input". Many who have

been seeking alternatives to conventional agriculture, tend to view the term "alternative" as one which encompasses most, if not all, of the others (NRC, 1989). The word "organic" was once considered to be a generic term representing these low-chemical, resource-efficient methods of farming (Youngberg et al., 1984). This, however, is no longer the case. The word organic now is used almost exclusively to refer to the non-use of chemical fertilizers and pesticides as a requisite for compliance with state certification standards for organically-grown foods.

#### EMERGING CONCEPTS AND STRATEGIES

The U.S. Department of Agriculture's Report and Recommendations on Organic Farming (USDA, 1980) was one of the first official documents which cited serious concerns among farmers, environmental groups and the general public about the adverse effects of the U.S. agricultural production system, particularly the intensive monoculture of cash grains (wheat, soybeans and corn) and the often excessive use of chemical fertilizers and pesticides.

These same concerns were re-emphasized a decade later with publication of a report on Alternative Agriculture by the National Research Council (NRC, 1989). Both reports found that many farmers, in addressing these concerns, had shifted away from conventional (chemical-intensive) farming systems to a less intensive, low-input approach

based primarily on sod-based rotations and mixed crop-livestock enterprises. A major conclusion of both reports was that these reduced-input farming systems are environmentally-sound, energy-conserving, productive, profitable and tend toward long-term sustainability.

In 1985 the U.S. Congress passed the Agricultural Productivity Act as part of the Food Security Act, Public law 99-198, otherwise known as the 1985 Farm Bill. This Act provided USDA the authority to conduct research and education programs on alternative agriculture, or, more specifically, on low-input or sustainable farming systems (USDA, 1988). For Fiscal Year 1988, Congress appropriated \$3.9 million to implement the research and education programs requested in the Agricultural Productivity Act. This funding was increased to \$4.45 million for Fiscal Years 1989 and 1990.

The concept that has emerged from these initiatives is one of low-input/sustainable agriculture or LISA. The ultimate goal of sustainable agriculture is to develop farming systems that are productive and profitable, conserve the natural resource base, protect the environment and enhance health and safety, and do so over the long-term. The means of how this can be achieved is through low-input or alternative methods and skilled management which seek to optimize the effective use of internal production inputs (i.e., on-farm resources) in ways that provide acceptable levels of sustainable crop yields and livestock production, and result in economically profitable returns.

In the U.S., the concept of "sustainable agriculture" has settled in as the ultimate goal. How we achieve this goal will depend upon creative and innovative methods and practices that provide farmers with economically-viable and environmentally-sound alternatives in their farming systems (Parr, et al., 1990; Reganold et al., 1990).

#### THE INSTITUTIONAL AND POLICY SETTING

Both the agronomic principles and underlying ideology of alternative agriculture proved to be remarkably resilient throughout the 1980's. At the beginning of the decade, when the word "organic" was the most commonly used "umbrella term" for referring to non-chemical and low-chemical farming systems (Youngberg et al, 1984), alternative agriculture was regarded generally as a counterculture movement with little relevance for mainstream production agriculture. Due to the lack of scientific credibility, proponents of alternative agriculture during the late 1970's and early 1980's were routinely ignored and ridiculed (Youngberg, 1978).

As we begin the decade of the 1990's alternative agriculture in the U.S. finds itself in a greatly altered and far more receptive social, political, and institutional environment. The adverse impacts of conventional agricultural practices are being documented and recognized, not only by agricultural scientists and farmers, but also by policymakers, including

environmentalists and consumers. Simultaneously, the true character and potential of alternative systems are becoming far better and more widely understood. As this process of acknowledgment, documentation, and concern grows, evidence of substantial institutional and political change favoring alternative agriculture is becoming increasingly apparent (NRC, 1989; Paarlberg, 1990; Parr et al., 1990). These developments provide a very different context for discussing and formulating agricultural policy than existed a few years ago.

#### FUTURE PROSPECTS

Nowhere has change been more evident than during the deliberations of the 1990 Farm Bill that will administer U.S. farm and food policies until 1995. For many years, the drafting of this quadrennial omnibus Farm Bill was dominated by commodity groups, USDA Agencies and Congressional Agriculture Committees. However, their position is now being seriously challenged by the environmental and consumer agenda in the agricultural policy process. The probable impact of the new agenda can be seen as the 1990 Farm Bill has evolved. For example, bills have been introduced for inclusion in the Farm Bill that would (a) allow farmers to use more diverse crop rotations without losing their traditional cash crop "base acreage" allocations and (b) establish certification standards and a USDA label for organically-grown products.

The prospect for increased funding of research and education programs for Alternative Agriculture are excellent. U.S. Senate and House Agriculture Committees, for example, have already approved \$40 million in authorizations for these programs, a substantial increase over the \$4.45 million currently allocated for USDA's LISA Program. All of this will have profound effects on U.S. Agriculture and on our society as a whole in the decade ahead.

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