

Editorial

Our Common Goal: Renewing Earth and Its People

The *American Journal of Alternative Agriculture* (AJAA) has become an international forum for original research articles on the biological, physical, social science, and policy aspects of alternative agriculture since its inception in 1986 by Garth Youngberg, then Director of the Institute for Alternative Agriculture. It is an honor for me to serve as Editor-in-Chief of this pioneering journal. The AJAA was one of the first scientific journals to focus on multidisciplinary approaches to understanding the character and potential of sustainable and organic farming systems as alternatives to industrial, chemical, and fossil fuel-based agricultural systems. A special thanks to Dr William Lockeretz for his 10 year leadership and forethought as technical editor in assuring clear definition of terms and concepts related to organic farming and sustainable agriculture. I also thank my immediate predecessor, Professor Robert Papendick, for the high standard of scientific quality that he set and maintained for the journal. Appreciation is also extended to Dr Kate Clancy and the staff at the Henry A. Wallace Center for Agricultural & Environmental Policy at Winrock International for their long-time publication of the journal and for continued suggestions as the journal takes on new shapes and directions under CABI Publishing. I embrace the challenge we all face in science in adapting to the rapid social, economic, and technological changes that will come. Agricultural and food production systems must continually change to meet the multiple economic, social, ecological, and environmental needs of earth and its people.

Over fifty-some years on this earth I've witnessed doubling of the world's population, a widening gap between the rich and poor, unprecedented climate change, environmental degradation, and a re-evaluation of energy use and alternatives. I attended school during the 'green revolution.' Scientific and technological advancements have allowed us to produce two to three times more food per unit area of land, saving perhaps one billion people from starvation and postponing expansion of agriculture into more fragile lands. However, when applied as one-dimensional, single-tactic approaches for increasing production of major grain crops, these technologies have reduced biological diversity, increased dependence on fossil fuels, and added large quantities of chemicals to the environment. These practices have degraded our water, soil, and atmosphere. In the past half-century, agricultural intensification has resulted in degradation of over 25% of the world's agricultural land, pastures, woodlands, and forests. Intensive production methods have led to transport of nitrogen and phosphorus from watersheds to rivers and groundwater and caused eutrophication of surface and coastal waters. We have witnessed a dramatic increase in the release of greenhouse gases caused by soil cultivation, fertilization, and increased use of fossil fuels.

Current industrial approaches to food production and distribution also fail to meet the needs of all people. Global food supplies per person are at their greatest level and are sufficient to meet the nutritional needs of all, if food were distributed on a per capita basis. But the fact is that 20% of the world's population appropriates over 80% of the wealth and resources. The remaining 4.8 billion people have access to less than 20% of the resources; 1.2 billion people earn less than one U.S. dollar per day and 800 million don't know from where their next meal will come.

In the 21st century, we are again challenged to produce and distribute food for a global population one-and-a-half to two times its current size. As agricultural systems grow to meet the demands of more people, increased pressure is placed on our natural resources. Competition for land, water, and energy resources from both urban and industrial sectors becomes more acute and the land base for agriculture shrinks. Under

current practices, greater food production will increase inputs into agricultural production systems, opportunity for environmental pollution, and degrade and deplete natural and non-renewable resources.

To sustain agriculture and the world for future generations, we must act *now* to develop production systems that rely less on non-renewable, petrochemical resources; rely more on renewable resources from the sun for our food, feed, fiber, and energy needs; and achieve the ecological intensification needed to meet the increased future commodity demand. To achieve this end, we need an understanding of farmers' needs and constraints to develop policies that will support and enable the adoption of these new systems. Better understanding and creative use of natural processes for meeting our food and energy needs will require lifestyle change to achieve the multiple goals of economic, ecological, and environmental sustainability. One highlight at a 'Soil, Food, and People' Conference at the University of California at Davis (March, 2000) was that needs of all people, including the poor and disenfranchised, can be met by alternative forms of production such as biointensive agriculture, if appropriate lifestyle changes are adapted. This system of farming has been effective in over 100 countries, meeting the basic nutritional and caloric needs of people while conserving or building soil, environmental, and natural resources. Biointensive Agriculture, as with other alternatives such as Natural Systems Agriculture, cannot presently be assimilated into the mainstream of modern agriculture and industrial structure. Both can provide useful models for the direction of future agriculture and will be needed if we are to achieve the vision of sustaining the soil, the earth, and its people.

Agriculture needs economical soil management practices that provide sufficient food and fiber while maintaining environmental stability, ecological integrity, and the quality of essential soil, water, and air resources. Our quest for sustainable land management starts with identification of the final destination or goal, proceeds to devising strategies or courses by which they can be achieved, and is confirmed by development of indicators that we are going the right direction. The health of our soil resources is a primary indicator of the sustainability of our land management practices. Strategies for sustainable management include conserving soil organic matter, minimizing erosion, balancing production practices with environmental needs, and making better use of renewable resources. To employ these strategies, however, we must first translate them into practices that are beneficial and accessible to producers. The condition of our soils ultimately determines human health by serving as the major medium for food and fiber production and a primary interface with the environment, influencing the quality of air we breathe and water we drink. There is a clear linkage between soil quality and human and environmental health. There are many other factors in the food system that also determine human health and the integrity of nations to care about their soil and land resources.

I look forward to my tenure as Editor-in-Chief of *American Journal of Alternative Agriculture*. The journal will undergo changes within the next year to reflect a broader audience and mission of moving us forward from recognized needs for agricultural alternatives to conventional agriculture to an enhanced vision for an agriculture that will renew the earth and all its people. To this end, I welcome Dr Wallace Wilhelm as Resources Review Editor and thirty new Associate Editors as listed on the inside cover. The breadth of experience and diversity of our editors is remarkable and includes international leaders in the physical, social, and earth sciences; four farmer practitioners; and many leaders of sustainable, organic, biological, and natural systems agriculture. My personal vision is for a world in which our scientific and technological breakthroughs are used to benefit the health, safety, and community of all people.

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