The Sustainability Revolution:  
Food as a Means and a Metaphor

John Ikerd

Sustainability is not just a passing trend or fad but in fact may prove to be the defining issue of the 21st century. Over the past few decades, sustainability has evolved from the futuristic vision of a handful of environmentalists to become the watchword of American corporations and government agencies. Most advocates of sustainability still agree with the United Nations Brundtland Commission’s definition: “Sustainable development meets the needs of current generations without compromising the ability of future generations to meet their needs as well.”1 There is general agreement also on the essential ecological, social, and economic dimensions of sustainability. With its growth in popularity, however, sustainability has lost much of its original significance as a fundamental challenge to current ways of working, living, and thinking.

Different organizations address the three dimensions of sustainability in different ways, but they all include references to ecological, social, and economic viability. The specific institutional commitments, however, tend to be narrowly defined in scope and focus. For example, EPA claims it has moved beyond “striving to ensure that industries met legal requirements to control pollution… to preventing it.” Their current focus is on “advances in science and technology to protect human health and the environment, and promoting innovative green business practices.”2 Walmart states three goals for their sustainability program: “To be supplied by 100-percent renewable energy, create zero waste, and sell products that sustain people and the environment.”3 Monsanto’s approach to creating a sustainable agriculture is: “Producing more, conserving more, and improving lives.”4

Over the years, institutional commitments to sustainability have been systematically redefined to accommodate the ongoing mission of business and government organizations. For government agencies, this means doing only those things for sustainability that do not conflict with the bipartisan commitment to continuing economic growth. For corporations, this means continuing to maximize economic returns to their investors or stockholders. Attention to sustainability has become a public relations necessity which sometimes assists in, but is never allowed to detract from, the pursuit of corporate profits and economic growth.

The basic problem with most existing sustainability initiatives is they let the necessary become the enemy of the sufficient. Increased efficiency in the use of nonrenewable resources, including fossil energy, will be necessary to realize maximum benefits from the remaining stocks

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of finite resources. Markets will provide incentives to use resources more efficiently and substitute more plentiful resources for scarce resources as resources become increasingly scarce. However, resource efficiency and substitution, while necessary, will not be sufficient to achieve sustainability. In addition to using resources efficiently, sustainable economic development must be a resilient and regenerative process that relies on solar energy to offset the inevitable depletion of the productivity of nonrenewable resources. Today’s emphasis on resource efficiency and substitution are only delaying the inevitable revolutionary and radical redesign our economy and government, which will be both necessary and sufficient to ensure sustainability.

Our economic and political systems ultimately must be redesigned using the paradigm of self-renewing, regenerative, living systems. This is not an impossible task. It will just require an intellectual revolution, a fundamental change in dominant ways of thinking, including the thinking of most scientists and academics. We simply can’t keep on doing the things we have been doing. Our economic and political systems aren’t working for the good of today’s society overall and certainly not for the good of future generations. Meeting the real challenges of sustainability will require a fundamental restructuring of our most basic beliefs, including how we believe the world works and where we humans fit within it. The quest for sustainability ultimately will change virtually every aspect of our current way of life.

The sustainable production and provision of food provides a compelling metaphor as well as an essential means to support this sustainability revolution. Food is among the most basic of all human needs. We are biological beings. If we destroy the biological integrity of the earth’s natural ecosystems, we will destroy the future of humanity. There are already too many people on the earth to return to hunting and gathering. Therefore, the sustainability of human life – at any level remotely comparable to that of today – depends on the sustainability of our supply of food, specifically the sustainability of agriculture.

Nowhere is the lack of sustainability in food production clearer – yet less understood and appreciated – than in the United States. We are told by the agricultural establishment that our food system is the envy of the world. U.S. consumers spend less than 10% of their disposable incomes on food, arguably less than in any other nation. U.S. supermarkets are filled year-round with an abundance and variety of fresh and processed food products from every corner of the earth. Our food is quick, convenient, and cheap. Why would we want to change our food system?

First, the current abundance of food has been made possible by the industrialization of American agriculture. While the industrialization of agriculture has resulted in tremendous increases in economic efficiency and productivity, it has had many unintended ecological, social, and economic consequences. Industrial agriculture is inherently reliant on non-renewable fossil energy, chemically-dependent monoculture cropping systems, and large-scale confinement animal feeding operations. We see the ecological consequences in eroded and degraded soils, polluted streams and groundwater, depleted streams and aquifers, and the growing threat of global climate change. Industrial agriculture shows utter disregard for the other living and non-living things of the earth upon which the sustainability of food production ultimately depends.

We see the socioeconomic consequences in the demise of independent family farms and the social and economic decay of rural communities, as the farms grow larger in size and fewer in
numbers. In addition, basic human rights of self-determination and self-defense are systematically denied to rural residents who are forced to live with the clear and compelling threats to public health associated with factory farms. “Right to farm” laws were never meant to ensure the right to operate degrading and polluting “farm factories.” Industrial agriculture is driven by economic values, and there is no economic value in doing anything solely to protect society or nature – the foundations of sustainability.

Second, the so-called modern, industrial food system has been an absolute failure in its most fundamental purpose of providing food security for the nation. A larger percentage of people in the U.S. are “food insecure” today than during the 1960s, with more than 20% of U.S. children living in food insecure homes. In addition, the only foods affordable to many lower-income families are high in calories and lacking in essential nutrients, leading to an epidemic of obesity and other diet-related health problems. Obesity-related illnesses, such as diabetes, heart disease, hypertension, and various forms of cancer, are projected to claim about one-in-five dollars spent for health care in the U.S. by 2020 – erasing virtually all of the gains made in improving public health over the past several decades. The irresponsible use of agricultural chemicals, growth hormones, antibiotics, and a multitude of additives in industrial foods add to the growing list of diet-related illnesses. We simply can’t afford the high and rising costs of more cheap food.

The sustainable agriculture revolution began and continues to grow as an ongoing protest to the industrialization of American agriculture. The new sustainable approach to farming has many names, including organic, biodynamic, holistic, bio-intensive, biological, ecological, and permaculture. Such farmers and their customers share a common commitment to creating a new food system that is capable of permanence through renewal and regeneration. Smaller independent food processors and retailers also are beginning to form alliances with local farmers and community members to compete with the large, corporate agribusinesses, which increasingly dominate both national and global food markets.

The revolution began with the organic movement in the U.S. in the 1960s but didn’t gain widespread support until the sustainable agriculture movement emerged in the 1980s. Organic food sales in the U.S. grew rapidly during the 1990s and early 2000s, averaging 20%-plus per year and doubling every three to four years. With the economic recession of 2008, growth rates declined and stabilized at around 10% per year, reaching $31.5 billion in sales in 2012. While organic sales still account for less than 5% of total food sales in the U.S., organic fruits and vegetables now claim more than 12% of their market – an impressive accomplishment in a nation with a long history of industrial extraction and exploitation.

However, the organic movement has changed over the years. It began as a group of small, back-to-earth farmers and small, cooperative natural foods retailers. As organic sales grew, economic pressures brought on a call for uniform national organic standards which opened up organic production and distribution to large, specialized farming operations and mainstream supermarkets. By 2007, the mainstream supermarkets and large natural food chains, such as Whole Foods and Trader Joe’s, accounted for more than 90% of the organic food market. Organic production also had become similarly dominated by large, specialized, “industrial organic farms.” As organic production moved to larger farms and into mainstream markets,
organic consumers increasingly looked to farmers in their own communities to ensure the ecological and social integrity of their food.

The local food movement began with roadside stands, farmers markets, and CSAs. A 2008 food industry study estimated that sales of local foods had grown from $4 billion in 2002 to $5 billion in 2007 and were projected to reach $11 billion by 2011. The growing popularity of local foods is most visible in the growing numbers of farmers markets and Community Supported Agriculture organizations or CSAs. USDA statistics indicate the number of farmers markets in the U.S. increased from 1,755 to 8,144 between 1994 and 2013, increasing more than four-fold in less than 20 years. Current estimates by the Local Harvest organization indicate there were 2,700 CSAs in the U.S. in 2009, compared with less than 100 in 1990.

The future potential of the local food movement can be seen in the growing number of local foods collaborations between farmers and consumers. Examples include food buying clubs, local food networks, food box schemes, regional food hubs, and a variety of farmer-owned cooperatives. Grown Locally, Idaho’s Bounty, Viroqua Food Coop, and the Oklahoma Food Cooperative are examples. The Oklahoma Food Cooperative website lists 20 similar cooperatives in other states. The USDA Agricultural Marketing Service lists more than 230 multi-farm “food hubs.” By cooperating, farmers can offer a wide variety of local products with purchase and delivery options ranging from CSA shares to on-line orders of individual items. The local food movement is evolving to better meet the needs of more people – both farmers and consumers. These new food systems range in scope from local to state or regional in size and from a dozen or so to hundreds of farmer/consumer members.

Various natural food retailing surveys have shown that approximately one-third of American consumers today are looking for alternatives to industrial foods, specifically foods that have ecological, social, and economic integrity, and their numbers are growing. Over time, with supportive changes in public priorities and policies, regional, national, and global networks of sustainable, community-based food systems could well replace the current industrial, corporately controlled global food system.

Sustainable food production is not a passing fad. It may change in character or focus but it will not go away. The emerging sustainable food system represents a fundamental change in ways of thinking that ultimately will change the future of humanity. As Albert Einstein once wrote, we can’t solve problems using the same thinking we used when we created them. The industrial paradigm of economic development reflects a mechanistic way of thinking that emerged during the times of Isaac Newton and Rene Descartes. Mechanisms and mechanistic organizations have proven to be very efficient in extracting useful energy, but they are fundamentally incapable of energy renewal or regeneration. No matter how efficiently mechanisms of the future may use energy or replace one source of energy with another, they eventually will deplete its usefulness. No matter how efficiently industrial organizations use energy – including businesses, governments, and nonprofits – they eventually will lose their ability to do anything useful for human society.

Sustainable economic development must be based on an organismic worldview – the world as a living ecological system. Only living systems are capable of self-renewal and regeneration.
and thus capable of offsetting the loss of useful energy to entropy. Green plants, for example, have the ability to capture energy from the sun and store useful solar energy in their tissues. Plants are biological solar energy collectors. People also are capable of capturing solar energy; we use windmills, water impoundments, and photovoltaic cells. People, being biological beings, are inherently dependent on the energy stored by green plants. Living things, including people, also have a natural inclination, as well as ability, to devote a significant portion of their life’s energy to reproduction, meaning renewal and regeneration. Sustainable economic development must be based on the paradigm and principles of biological, living systems.

Businesses, governments, and all other organizations of the future must be managed as living organisms, rather than inanimate mechanisms. Mechanisms function according to physical laws, which can be expressed as mathematical formulas. Living systems function according to general principles which are more difficult to define and quantify but no less real. When we apply a specific production practice or management strategy to a particular plant, animal, or person we never know for sure how they will react. We know “in principle” how they will respond, but not how a particular plant, animal, or person will respond in a particular situation.

Living systems are holistic. A living organism is something more than the sum of its parts; it is a whole. Living systems have properties that emerge from the whole that are not contained in their individual parts; relationships matter. Sustainable organizations must also respect the ecological principle of diversity. Diversity is necessary for biological systems to capture, store, and recycle the solar energy needed for resistance, resilience, renewal, and regeneration. The payoff from holism and diversity is realized through the principle of interdependence or mutuality. Mutually beneficial relationships make it possible to create sustainable systems from elements or parts that individually and separately are simply not sustainable.

Families, communities, and societies are also living systems and thus function according to principles rather than laws. Relationships among true friends and within sustainable communities must be built upon the social principle of trust rather than relying on laws and contracts. Laws are only effective in constraining the incorrigible and antisocial. People must choose to be honest, fair, and responsible in their dealings with each other. We humans are fallible beings; we need mercy as well as justice. Sustainable relationships must be based on caring and kindness. We must be empathetic, respectful, and compassionate. Finally, people must find the courage and commitment to be trusting and caring in our relationships. It takes “moral courage” to sustain positive relationships in a world where trusting and caring are seen as naïve or idealistic.

As individuals, we must respect the basic principles of economics. The most basic economic principles reflect the innate nature of individual human behavior. These principles also provide the foundation for the economic viability of sustainable organizations. We value things individually that are scarce, not things that are necessary but also abundant, like air and water. We need to get as much usefulness as we can from whatever we have; we need to use our time, money, and energy efficiently. We also need to be able to make independent decisions; we value our sovereignty. We need not accept the dominant economic belief that our self-interest serves the greater common good, but we must respect the basic principles of economics if we are to meet our individual needs and sustain business organizations and local and national economies.
Finally, sustainable development must have ecological, social, and economic integrity—all three. These same basic principles must permeate all aspects of life. The principles of holism, diversity, and interdependence must permeate societies and economies. The principles of trust, kindness, and courage must also be reflected in ecological and economic relationships. And, the principles of scarcity, efficiency, and sovereignty must be used in managing natural ecosystems and maintaining social relationships. Sustainability requires a renewed commitment to integrity based on ecological ways of thinking about how the world works and our place within it.

Sustainable agriculture not only holds promise for meeting the essential biological needs of human society, sustainable farming also provides a useful metaphor for managing sustainable businesses and government agencies in general. Sustainable farmers rely on green plants to capture and store solar energy and to regenerate the organic matter and natural productivity of the soil. They use crop rotations, cover crops, intercropping, managed grazing, and integrated crop and livestock systems to manage pests and maintain the fertility of their soils. They are able to reduce costs by relying less on purchased inputs, many of which are derived from fossil energy, while maintaining or increasing their productivity and profitability.

Sustainable farmers build personal relationships with their customers, not just to create a market but also because they value their friendships. Farmers and their customers find a renewed sense of community at farmers markets, community supported agricultural associations (CSAs), and community gardens, and other direct marketing venues. Sustainable farmers give priority to their local communities in marketing their products and purchasing products and local consumers give priority to local farmers—both value community and society. Farmers are able to increase product value and profitability while helping to build stronger local economies and communities.

Most important, sustainable farmers accept an ethical and moral commitment to preserve the natural productivity of their land and their communities by leaving them as good as or better than they found them. Sustainable farmers realize direct value from their relationships with their land and with people, not just the instrumental or economic value. They work in harmony with nature, not just to maintain productivity, but also to respect their honored role as stewards of the land. They work in harmony with society, not just to create new markets, but to respect their honored role as responsible members of the human community.

Sustainable farmers embrace the historic philosophical principles of organic farming. Sir Albert Howard, a pioneer of organics, began his book, *An Agricultural Testament*, with the assertion, “The maintenance of the fertility of the soil is the first condition of any permanent system of agriculture.”21 He contrasted the permanent agriculture of the Orient, specifically China and India, with the agricultural decline that led to the fall of Rome. He concluded, “The farmers of the West are repeating the mistakes made by Imperial Rome.” J. I. Rodale, another prominent proponent of organic farming, defined organics in terms of intergenerational equity; he wrote, “The *organiculturist* farmer must realize that in him is placed a sacred trust… As a patriotic duty, he assumes an obligation to preserve the fertility of the soil, a precious heritage that he must pass on, undefiled and even enriched, to subsequent generations.”22

Rudolph Steiner, the founder of Biodynamic Farming defined an organic farm as a living system, as an organism, whose health and productivity depended on healthy relationships among
its ecological, social, economic, and spiritual dimensions. He wrote, “A farm is healthy only as much as it becomes an organism in itself – an individualized, diverse ecosystem guided by the farmer, standing in living interaction with the larger ecological, social, economic, and spiritual realities of which it is part.”

To Steiner, organic farming was about relationships – physical, social, and spiritual relationships – among the farm, farmer, food, and eater.

The organic farmer, as described by Steiner, Howard, and Rodale, provides a metaphor for the socially and ethically responsible producer, consumer, or citizen in a sustainable society. Ultimately, sustainability will require the rethinking of the concept of “self” in the image of these authentic organic farmers. The intentional self, which is necessary for sustainability, is an “emergent property” of the essential qualities of a person understood as a unified whole. The essential qualities of the intentional self are physical, mental, and spiritual – the body, mind, and spirit. Thus, the intentional self is unique in that each person reflects a distinct configuration or combination of the physical elements and thoughts that make up his or her body and mind, even if all people share the same spiritual source of consciousness. Each distinct arrangement of body, mind, and soul constitutes a unique self.

The spiritual aspect of self gives purpose to the intention of the mental aspect of self, which initiates action through the physical aspect of self. Lacking any one of the three dimensions of self, the intentional action essential for sustainability is impossible. Intention without the ability to act is of no consequence and action without purpose has no coherence or meaning. The intentional self is not a body, mind, or spirit; the intentional self has a body, mind, and spirit. Self is the emergent property that arises from a unique organization or whole of body, mind, and spirit – the essence of the whole.

A natural hierarchy exists among the spiritual, mental, and physical qualities or dimensions of the intentional self. Higher levels are higher in the sense that the purpose and principles arising from the highest level and interpreted through lower levels are inviolable and thus require deference and respect. These basic principles or laws of nature can be denied or ignored but the consequences of such violation cannot be avoided. Thus, higher levels require deference and respect in all intentional actions. However, realization of the possibilities or potentials of higher levels is always dependent on lower levels of organization. Higher levels give meaning to the realization of possibilities, and lower levels, guided by principles, allow the realization of those possibilities. All levels are interdependent or at least potentially mutually beneficial.

This may sound complicated, but all we really need to do to create a new sustainable food system and a sustainable future is to return to our common sense of what gives our lives quality, purpose, and meaning – what brings deep and lasting happiness. Certainly, we are physical beings; we have individual economic needs that must be met. We need food, clothing, shelter, transportation, and the other economic necessities of life. However, we are also social beings; we need positive relationships with other people, not because we might get something tangible in return, but because we need to love and be loved. Finally, we are ethical or moral beings; we need to feel a sense of rightness and goodness about what we do and how we live, which can come only from a sense of purpose and meaning in life.
Certainly, we need to care about ourselves. But, it is not a sacrifice to care about others; caring and sharing make our lives better. It is not a sacrifice to respect the needs of future generations. Stewardship of the land and of society makes our lives better. In our pursuit of sustainability, we need only give the pursuit of true happiness priority over the pursuit of income or wealth. All we really need to do is return to being fully human – ethically, socially, and individually. Happiness comes from living in balance and harmony with the fundamental priorities and principles of nature. It’s time for a sustainability revolution, and sustainable farming and food production provide both the means and metaphor for fundamental change.

End Notes:

4 Monsanto, Our Commitment to Sustainable Agriculture, http://www.monsanto.com/whoweare/Pages/our-commitment-to-sustainable-agriculture.aspx
5 The “agricultural establishment” refers to the large agribusiness corporations, agricultural commodity organizations, the American Farm Bureau Federation, the U.S. Department of Agriculture, and state Departments of Agriculture.
13 Local Harvest, http://www.localharvest.org/
16 Visit the Idaho’s Bounty website at http://www.idahosbounty.org/.
17 Visit Viroqua Food Coop website at http://viroquafood.coop/.