

## 2050 in America; Food and Farms of the Future<sup>i</sup>

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A “food revolution” is erupting all across America. Last spring Jamie Oliver, an outspoken British chef turned activist, called for a “food revolution” in America.<sup>1</sup> The occasion was the premier of a six-episode reality show on ABC Television. The premise of the show was that our physical health is linked directly to the foods we eat. In the first episode, Oliver pointed out that today's children are the first generation whose members are expected to live shorter lives than their parents. It's not the kids' fault; they eat what their parents and other adults choose to feed them, or at least allow them to eat. Too often, this means whatever is cheapest, quickest, and most convenient. In our pursuit of quick, convenient, cheap food we are destroying the health of our children and the future of our nation.

Best-selling books, such as *Fast Food Nation*<sup>2</sup> and *Omnivore's Dilemma*,<sup>3</sup> have awakened mainstream society to the dramatic changes that have been taking place in our food system. Video documentaries such as *Future of Food*,<sup>4</sup> *Broken Limbs*,<sup>5</sup> *Food Inc*<sup>6</sup> and *Fresh; the Movie*<sup>7</sup> provide gripping images of the negative impacts of our industrial food system on nature, our society, and even the future of humanity. They all tell the same story of a food system that is lacking in ecological, social, and economic integrity. The tipping point may be growing public concerns about diet related health problems and the associated costs of healthcare. The HBO network has a new multi-documentary project underway linking the rise in obesity and other diet related health problems to the industrialization of the food system.

The various books and documentaries also tell a story of hope for the future through the voices and images of the farmers and consumers who together are creating a new, sustainable food system. The farmers may label themselves organic, biodynamic, ecological, natural, holistic, or choose no label at all. The foods may be natural, organic, free-range, cage-free, locally grown, or any number of other distinctions from conventional, industrial foods. These farmers and consumers are creating a permanent, sustainable agriculture and a healthful, sustainable food system. They are creating a food system that has ecological, social, and economic integrity. These farmers and their customers are leading the “good food revolution.”

The media tends to focus on a few *celebrity farmers*, such as *Joel Salatin*<sup>8</sup> (*Polyface Farms, Inc.*) of Swope, VA and *Will Allen*<sup>9</sup> (*Growing Power Inc.*) of Milwaukee, WI. However, there are tens of thousands of these new farmers scattered across the country. At least six “sustainable agriculture” conferences in the U.S. and Canada draw 1,500 to 2,500 people each year – including both farmers and their customers. Conferences drawing 500 to 700 people are

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commonplace and virtually every state in the U.S. has an organic or sustainable agriculture organization, drawing 100 to 250 people to their annual conferences.

The “local food movement” is the most prominent dimension of the good food revolution at present. People tend to underestimate the importance of local food because they associate it with farmers markets and community supported agricultural organizations or CSAs – and more recently, with home gardens and community gardens. While these are and will continue to be important, the local food movement is probably most accurately defined by the growing number of retail food stores, restaurants, and institutional food buyers who are committed to sourcing as much food as possible from local growers.

It's also important to understand, the current local food movement is actually a continuation of the natural and organic food movements which have their roots in the “back to the earth” movement of the early 1960s. First natural, then organic, and now local foods have been the fastest growing segment of the food system over the past two decades, roughly doubling in size every three to four years. The total sales of all alternative foods – authentic natural, organic, and local – probably still amount to only 7% to 10% of total retail food sales. However, the most recent market surveys indicate that approximately one-third of American consumers are looking for foods that are fundamentally different from the foods they are finding in mainstream supermarkets and franchise restaurants today – and are willing to pay a premium to get what they want. We are witnessing the emergence of a “good food revolution.”

In reality, the good food revolution is but a small part of a much larger revolution that is underway all across America and around the world. Every two to three hundred years in human history there has been such a revolution. The last was the industrial revolution of the late 1700s, some two-hundred years ago. The one before that was the *enlightenment* of the early 1600s – the beginning of the *age of reason* and the birth of science. During these great transformations, the future of human civilization is fundamentally changed. Societies change their opinions about life's most fundamental questions: how the world works, where we fit within it, and therefore, how we should live. Codes of ethics and systems of government and economics are reformed to accommodate the new worldview. We are in the midst of such a great transformation today.

The transformation is being driven by questions of sustainability. Sustainability is not just a buzzword; it is the fundamental question confronting both the *developed* and *developing* worlds of today. It asks whether our current way of life is sustainable – ecologically, socially, and economically. It asks whether we can meet the needs of the present without diminishing opportunities for the future. Virtually every major U.S. corporation, government agency, and non-profit organization now feels compelled to have a major sustainability initiative. These initiatives deal with issues of environmental protection, social equity, and economic viability. When we ask the deeper questions of sustainability, we realize that we eventually must change virtually every aspect of our economy, our society, and our individual lives.

Most important, we must change our economy. Rates of economic growth that we have come to consider as “normal” quite simply are not sustainable. The economy of the industrial era, particularly of the past century, was an aberration in human history. For example, if economic growth rates of 3% to 4% had persisted over the past 200 years, since the year one, a global

Gross Domestic Product of one-dollar at that time would have grown into a global economy that would provide every person on earth, all six-and-one-half billion of us, with enough money to spend a million dollars every second of every day of the year. Furthermore, every 20-yr people would have twice as much to spend as the 20-yr before. The US economy of some \$10-trillion obviously cannot sustain growth rates of 3%-4% for another 2000 or even 100 more years.

The economic growth of the industrial era was possible only because of abundant supplies of easily accessible energy. First it was the old-growth forests, then surface coal, and for the last century shallow deposits of oil and natural gas. But the days of cheap, abundant energy are over. The old forests are gone, tops of mountains are being blown off to get the remaining coal, and the remaining reserves of oil and gas are deep beneath the ocean floor or in remote corners of the earth hardly touched by civilization. In addition, continued reliance on fossil energy poses unacceptable environmental risks, such as global climate change, that threaten the future of human life on earth. The alternative that eventually will replace fossil energy – wind, water, photovoltaics, and direct solar – will be less plentiful and more costly than fossil energy. Denial and neglect cannot change the hard, cold facts: the industrial era of economic growth is over.

In fact, much of the economic growth of the past few decades has not added any real value to American society. The most obvious example has been the growth in two-wage-earner families. The stay-at-home homemakers weren't unemployed, they just weren't paid for the work that they were doing. Since they weren't paid, they didn't contribute to the economy. When homemakers went to work for money, their work contributed to economic growth. If they hired someone to do the housework they were doing before, that added another job to the economy. Unfortunately, much of the past work of stay-at-home homemakers isn't being done by anyone, resulting in the high social and economic costs of dysfunctional families. There are many good reasons for two-wage-earner families, but their increasing numbers has created an illusion of economic growth.

Much of the booming economic growth of the 1990s was purely speculative. Admittedly, the new electronic technologies created some real economic growth by facilitating increased efficiency in the use of both natural and human resources. However, much of the growth in the stock market was a result of “irrational exuberance,” in the words of Alan Greenspan, former Chairman of the Federal Reserve System. When the “dot.com bubble” burst, the illusion was revealed, the stock market plunged, and the nation fell into an economic recession.

Rather than addressing the challenge of creating an economy appropriate for the post-industrial era, the economic oligarchy created another economic illusion – the financial house-of-cards of the early 2000s. They created sophisticated financial instruments that allowed them to make housing loans that borrowers obviously couldn't afford to pay off – unless housing prices continued to rise. The resulting increase in homebuilding spurred enough economic growth to fuel the speculative illusion. When the “financial bubble” burst, the illusion was revealed, housing prices fell, the stock market fell, banks failed, home foreclosures skyrocketed, and the country was plunged into the “great recession.”

The only thing that saved the country from financial collapse was a generous government bailout of the large financial institutions and a budget-busting government stimulus program that substituted government spending for the lack of consumer and business spending. Unfortunately,

the fundamental problem of unsustainable growth is still not being addressed. A “government spending bubble” has been created to replace the “financial bubble.” An economy supported by government borrowing that the people won't repay, by raising taxes or cutting spending, is no more sustainable than an economy supported by housing loans that borrowers couldn't repay.

In addition, if we attempt to balance the federal budget by cutting spending or raising taxes, there will be nothing to replace the deficit government spending that is supporting both private and public sector jobs and is propping up our ailing economy. Short term interest rates have been virtually zero for months, and private businesses remain unwilling to borrow and invest. With growing public animosity and political dissension, the government lacks the political consensus of the people to take the bold action needed to guide us through the great transformation. If we, the American people, fail to confront the reality of unsustainable economic growth, we risk plunging our nation into another “great depression,” one from which we might not recover.

All economic value is ultimately derived from either nature or society. This is the economic reality we ultimately must confront. All tangible things of economic value – our houses, cars, clothes, computers, cell phones – are made of materials that come from the earth, from nature. Society provides the labor, creativity, and entrepreneurship needed to create such things, as well as the intangible personal services, such as healthcare, education, and entertainment. Much of the so called “real” economic growth of the past thirty years has been achieved by relaxing environmental and social restraints on economic exploitation. Even then, American industry has had to dig deeper, search wider, and fight harder for access to fossil energy and other natural resources. American workers have had to work longer and harder for less pay and fewer benefits just to keep a job. We simply cannot sustain economic growth by continuing to extract natural resources and exploit the American workforce. This is economic reality.

All economic value is individualistic. The aggregate economy is nothing more than a collection of individual workers and individual businesses. There is no economic value in doing anything solely for the benefit of someone else or for the benefit of society in general. Economic relationships are always premised on the promise of getting something of economic value in return. Since economic value accrues to the individual, there is no way to realize economic value after we are dead. In addition, life is inherently uncertain; so the economy puts a premium on the present relative to the future. That's why we have to pay interest to borrow and expect interest when we loan money. Consequently, there is no economic incentive to do anything for the sole benefit of those of future generations. A society that allows its economy to be driven solely by economic value is simply not sustainable. This is economic reality.

America is at a crossroads in history. We can continue on our recent road of denial and retreat from reality or we can seize the opportunity created by growing economic disillusionment to fundamentally reshape and rebuild the American economy. Current corporate initiatives to reduce environmental degradation are necessary but not sufficient. Initiatives to increase the efficiency with which we use fossil energy, likewise, are necessary but are not sufficient for sustainability. Substitution of renewable for nonrenewable energy also will be necessary but not sufficient. Attempts to reduce the negative impacts of economic activity on social equity are both commendable and necessary but will not be sufficient to ensure sustainability. All of these things simply slow the rate at which we are moving in the “wrong” direction.

We must fundamentally transform our economy from an economy that depends on the extraction and exploitation of natural and human resources to a society that regenerates the productivity of nature and renews the productivity of society, even when it is not economically efficient or profitable to do so. We must work together through government to ensure that our economy reinvests a sufficient portion of its profits into regeneration and renewal of nature and society to ensure that the basic needs of all are met without compromising the ability of future generations to meet their basic needs as well. Ultimately, we must face economic reality and work together to create a sustainable society and economy.

Americans simply must accept the fact that the economic growth rates of the past century are not sustainable. The new post-industrial era must be an era of slow growth, at times even no growth. Yet it will be a time of human progress, if we successfully weather the transition. If we choose wisely, the transformation could well be a major step forward in the betterment of human life on earth. The father of Keynesian economic theory, John Maynard Keynes, anticipated this new era back in the 1920s. He wrote, “the *economic problem* may be solved, or at least within sight of solution, within a hundred years. This means that the economic problem is not... *the permanent problem of the human race*.”<sup>10</sup> Man's permanent problem will be “how to use his freedom from pressing economic cares... to live wisely and agreeably and well.” The challenge for the vast majority of Americans, as well as the rest of the so called *developed* world, is not to restore unsustainable economic growth, but instead to learn to live “wisely, agreeably, and well.”

If we could skip forward in time to see America in the year 2050, perhaps we would be more willing to make the hard choices in meeting the challenges of sustainability. Keynes warned that “no country and no people... can look forward to the age of leisure and abundance without dread. For we have been trained too long to strive and not enjoy.” The human species has been striving so long to meet its basic material needs that it is difficult for us to realize that we now have enough stuff and to turn our time and energy to learning to live wisely, agreeably, and well. There are inherent risks in doing so, but the positive possibilities make the risks worth taking.

If we learn to live wisely, agreeably and well, America in 2050 will be a nation learning to embrace a new worldview and a new paradigm for economic development as it moves toward a new and better way of life. Americans will be beginning to understand the world as a giant complex living organism, rather than an inanimate mechanism. They will realize they are an integral part of earth's natural ecosystem, rather than something apart from it. They will respect the fundamental laws of nature, including the laws of human nature. They will understand that the economy is a part of society and society a part of nature, and thus, the economy must meet the needs of individuals in ways that respect the basic principles by which healthy societies and ecosystems function. They will have learned the essential principles of sustainability.

Equally important, Americans of 2050 will be among “those people, who can keep alive, and cultivate into fuller perfection, the art of life itself,” returning to the words of Keynes. They will no longer “sell themselves for the means of life,” and thus will “be able to enjoy the abundance.” They will be coping with what Keynes called the *permanent problem* of society: learning to live wisely, agreeably, and well. They will realize that growth in human well-being has no logical limit or conclusion, once they realize their quality of life no longer depends on economic growth.

The “new normal” of no growth and slow growth in the economy, will be accepted by Americans, not as a curse but as a blessing – an opportunity to cultivate the true art of living. They will focus on quality of life rather than the quantity of stuff, pursuing greater material wealth only when needed to achieve harmony among physical, social, and spiritual well-being.

Even today, a growing body of social science research indicates that beyond some fairly modest level of income there is no relationship between further increases in income and increases in happiness or overall well-being.<sup>11</sup> Once our basic material needs are met – food, clothing, shelter, health care – the quality of our life depends far more on the quality of our relationships – with friends, family, community, society – than on quantity of income or wealth. Happiness also depends on having a sense of purpose and meaning in life. Without purpose, our life has no meaning. There is no way of knowing whether what we are doing is ethical or morally right or good. Once our material needs are met, the pursuit of happiness is about developing the social and spiritual dimensions of life, rather than striving to acquire more income or wealth.

In a more enlightened world of 2050, the so called lesser-developed countries of the world will not have consumed all of the earth's natural resources in achieving sustainable levels of economic development. They will have learned that beyond about \$10,000-\$15,000 per person in Gross Domestic Product, roughly equivalent to per capita income, there has been no relationship between economic growth and overall quality of life.<sup>12</sup> In addition countries where people are more equitable economically, where there is less disparity between the rich and poor, people tend to be happier, regardless of their absolute level of income. Thus developing countries of the future will balance their modest needs for economic growth with the need to build stronger and more equitable societies. Their quality of life also will be enhanced as they fulfill their ethical responsibility to future generations by being good stewards of their nations' natural resources.

In a more enlightened America, public policies that protect natural resources from needless extraction and exploitation will not be imposed by government on the people but will reflect the “consent of the governed.” The government will have facilitated the economic transition from dependence on dwindling stocks of fossil energy to reliance on various forms of solar energy, the only sustainable source of energy. The government will also return to its historical function of ensuring economic competition, by ensuring that corporations do not become large enough to manipulate or distort free markets, and certainly not “too big to fail.” The individual economy will then function within the context of a socially equitable and ethical responsible society, thus enhancing the quality of life of all and ensuring economic sustainability.

During inevitable periods of cyclical unemployment, government policies will provide incentives for employees to share the available work among the available workers rather than allowing large segments of the population to be completely unemployed. For example, rather than have 10% of the workforce unemployed, everyone could be 10% unemployed. Everyone could go home at noon on Friday, leaving more time to cultivate the true art of living. More enlightened government policies will promote the development of technologies that employ more people, productively and creatively, in the process of producing less material output. This will simply reverse the priorities of the industrial era where new technologies displaced rather than empowered workers. The focus would be on providing *adequate* employment to allow society to pursue the permanent problem of learning to live wisely, agreeably, and well.

In a more enlightened world, peoples' lives will be more socially connected and their old age will be more economically secure. Once these social and economic security incentives for larger families are no longer present, global population will level out and stabilize at a comfortable carrying capacity for the earth's resources. Increasing population will occur only if and when increases in efficiency of resource use make a larger population sustainable. Otherwise, there will be no further need for economic growth. The economic problem will be solved for all.

The enlightened America of 2050 will be organized quite differently from the centralized, consolidated, hierarchal society and economy of today. Much of the centralized political power would have been devolved to state and local levels. The federal government will return to its historic constitutional purpose of ensuring equal access to things to which all Americans have equal rights. State governments will focus on those things that can be and need to be done differently in different geographic regions and cultures within the country. This will leave local governments with the other things that must be done for the common good of society but cannot or will not be done by individuals, families, or other informal groups within communities.

The American society and economy will also have devolved, decentralized, and re-localized to better meet the needs of the post-industrial, sustainable society. American communities of the future, both rural and urban, will not be economically self-sufficient, but locally owned and operated businesses will be capable of meeting most basic day-to-day needs of their local community. Local businesses will be sustained by the commitment of the community to support its local economy. Large corporate manufacturers and retailers will be supplemental or secondary providers of goods and services but will not dominate local economies. Local builders will provide affordable, energy-efficient housing. Energy-generating residences and locally-owned electric utilities will meet most energy needs of the community with wind, water, and solar generated electricity. Local farmers will provide sustainably-grown foods.

Returning to the food system, by the year 2050, fossil energy depletion and environmental degradation will have made today's industrial, global food system economically obsolete. It's not just a matter of rising transportation costs. The economic feasibility of the entire industrial food system – production, processing, packaging, refrigeration, cold storage, mass merchandizing – depends on an abundance of relatively cheap fossil energy. The American food system currently claims about 20% of total fossil energy use and accounts for an even larger percentage of emissions of CO<sub>2</sub> and other greenhouse gases.<sup>13</sup> Without cheap fossil energy for fertilizers and fuel, agriculture will be forced to return to organic and other regenerative, sustainable approaches to production that rely on green plants to capture and store solar energy in the healthy, organic soils. By the year 2050, the American food system will have been forced to devolve to production and distribution to accommodate local and regional markets. National and global food markets will be primarily high-value, non-perishable, minimally-processed foods, such as coffee and spices. Americans will be healthier and health care costs will be in decline.

The American farms of 2050 will be smaller because sustainable farms are inherently more management and labor intensive, meaning more farms and more opportunities for farmers. Such farms will fit the new paradigm for technology development by employing more people in the process of producing a given amount of food. It takes knowledge, creativity, innovation, and

entrepreneurship to produce food sustainably. Human scale technologies, such as the microcomputer, will make knowledge more easily acquired and creativity and entrepreneurship more effectively used. Even today, organic and other sustainable systems of food production can produce as much or even more than industrial systems per acre of land or dollar of investment. They just require more thoughtful, insightful, caring farmers. Why not have more such farmers?

Farmers markets, CSAs, and home gardens will grow in importance and more locally grown foods will move through local supermarkets, restaurants, and institutions. However, the food systems of the future will more closely resemble today's multi-farm CSAs or local food cooperatives. *Grown Locally*,<sup>14</sup> *Idaho's Bounty*,<sup>15</sup> and *the Oklahoma Food Cooperative*,<sup>16</sup> for example, are cooperative organizations of farmers and consumers that offer a variety of vegetables, fruits, meats, eggs, cheese, baked goods, flowers, and herbs produced by local farmers. Many items are available as CSA shares, standing orders, or for week-by-week purchase. Customers have the option of on-farm pick-up, local delivery points, or delivery to the door. Websites allow producers to post what they have available each week, ensuring that products sold are available for delivery and allowing customers to place or revise their orders on the website. Such systems have the potential to be far more energy efficient and environmentally benign than are today's systems of food production and distribution. In the world of 2050, with the next generations of the Internet and Fed-Ex, a global network of sustainable, community food systems will have replaced the industrial, global food system as the dominate source of food.

The most successful American communities in 2050, rural and urban, will be those learned from the “good food revolution” of the early 2000s. They will be communities that have preserved and restored the fertile farmlands that remained in the areas where most of the cities and towns in American were initially settled. They will be communities that understood that the local food movement was not just about restoring healthy diets and healthy bodies, although health is obviously essential to physical well-being. Local foods provide both the motivation and means of reconnecting people in meaningful personal and social relationships. Local foods also allow people to support their local farmers economically, and thus support their local economies. Through local farmers, people reconnect spiritually with the land and regain a sense of purpose and meaning in life through a commitment to stewardship of nature. The good food revolution is the precursor to the “good life revolution” – an ecological, social, and economic revolution.

However, none of these good things will be possible unless we abandon our pursuit of narrow, individual economic self-interest and return to the broader pursuit of happiness and quality of life. Obviously, we are physical beings, but the material needs are quite modest and well within the earth's capacity to sustain a regenerative economy. We can't sustain continual economic growth but we can sustain sufficient economic growth to meet the basic needs of all, if we choose to do so. We can sustain continuing prosperity even without economic growth, if we find the wisdom to focus our time and energy on relationships and ethics instead of economics. We can sustain prosperity through harmony and balance among the material, social, and spiritual dimensions of our lives. There are no limits to human betterment, if we cease our striving for wealth and focus on learning the true art of living.

## End Notes

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- <sup>1</sup> *Jamie Oliver's Food Revolution*, <<http://abc.go.com/shows/jamie-olivers-food-revolution>>
- <sup>2</sup> Eric Schlosser, *Fast Food Nation: The Dark Side of the All-American Meal* (New York: Houghton Mifflin, 2001).
- <sup>3</sup> Michael Pollan, *The Omnivore's Dilemma: A Natural History of Four Meals* (New York: Penguin Press, 2006).
- <sup>4</sup> *The Future of Food* <<http://www.thefutureoffood.com/>>
- <sup>5</sup> *Broken Limbs*, <<http://www.brokenlimbs.org/endorsements.html>>
- <sup>6</sup> *Food Inc.*, <<http://www.foodincmovie.com/>>
- <sup>7</sup> *Fresh; the Movie* <<http://www.freshthemovie.com/>>
- <sup>8</sup> *Polyface Farms Inc.* <<http://www.polyfacefarms.com/>>
- <sup>9</sup> *Growing Power*, <<http://www.growingpower.org/>>
- <sup>10</sup> John Maynard Keynes, *Essays in Persuasion*, (Miami, FL: BN Publishing – no copyright date) pp. 366-368.
- <sup>11</sup> Ed Diener and Martin EP. Seligman, "Beyond Money, Toward an Economy of Well-Being," *Psychological Science in the Public Interest*, 5 (1), 2004, 1–31.
- <sup>12</sup> For a bibliography of happiness research, visit *the Positive Psychology Center*, University of Pennsylvania, <<http://www.ppc.sas.upenn.edu/positivepsychologyresearch.htm> >
- <sup>13</sup> From a presentation by David Pimentel, Cornell University, at *Local Solutions to Energy Dilemma*, New York City, April 28-29, 2006. Revised to account for increased energy use from earlier estimate published in David and Marcia Pimentel, *Food, Energy, and Society* (Niwot, CO: University Press of Colorado), 1996.
- <sup>14</sup> Visit the *Grown Locally* website at <<http://www.grownlocally.com>>
- <sup>15</sup> Visit the *Idaho's Bounty* website at <<http://www.idahosbounty.org/>>
- <sup>16</sup> Visit the *Oklahoma Food Cooperative* website at <<http://www.oklahomafood.coop/>>