

The Imperative to Innovate: Solutions for Food System Transformationⁱ

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The word “innovation” is so frequently misused, abused, and confused that people may be tempted to avoid using it. In this respect, it is much like the words “love” or “sustainability.” Although ambiguous in nature, such words are essential to meaningful communication because they represent basic ideas that are fundamental to human life. In the most basic sense, love is a belief in goodness, and without it life isn’t worth living. Sustainability is necessary for human survival which is necessary for the realization of the inherent goodness in being human. Innovation is essential for meeting the innate human need for progress or betterment – beyond sustainability.

With respect to innovation, I agree with Scott Burken who for decades has researched and written extensively on the subject: “If you must use the word, here is the best definition: *Innovation is significant positive change*. It’s a result. It’s an outcome. It’s something you work towards.”¹ Thus, the imperative for innovation in the food system reflects the necessity for *significant positive change* – meaning a fundamental transformation in the current food system.

The questions posed for this panel include: “As Canada moves towards developing a national food policy, how do we ensure it enables healthy, sustainable and equitable food systems across the country?” The challenge of sustainability is imperative for food system transformation. In the most basic terms, sustainability is the ability to meet the needs of the present without diminishing opportunities for the future. Thus, a sustainable food system must be able to meet the basic food needs of all in the present while leaving equal or better opportunities for those of future generations to meet their needs as well. No civilization or nation that has failed to provide enough food for its people has been able to survive. Given the global nature of today’s society, humanity cannot survive without a sustainable global food system.

Everything of value to humanity, including our food and everything of economic value, ultimately must come from the earth by way of society. There is no place to get anything of value other than from the air, water, soil, minerals, and biological systems of the earth. Beyond self-sufficiency, we must meet our needs through relationships with other people. The economy is simply a means of meeting our needs impersonally – by earning, buying, and selling – rather than through personal relationships. Thus, to meet the challenge of sustainability, a food system must be ecologically sound, socially equitable, and economically viable.

Another question posed to this panel: “How can environment, equity and economics be brought into balance through innovation?” First, the innovation needed to achieve balance and

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harmony must be “systemic” rather than incremental, piecemeal, or opportunistic. The challenge of sustainability is what social scientists sometimes call a “wicked problem.”² Wicked problems arise due to incomplete data, complexity, interconnectivity, and dynamics of the systems within which such problems arise. Wicked problems are impossible to solve partially or sequentially because it is virtually impossible to isolate specific causes and effects. Different scientists draw different conclusions from different subsets or series of data because of their inability to collect and analyze enough information to draw irrefutable conclusions. Apparent *causes* actually may be the *effects* of other causes somewhere in the system. Efforts to solve one aspect of wicked problems often reveal or create other problems elsewhere in the system.

Wicked problems can be solved only by choosing fundamentally different systems, which writer/philosopher Wendell Berry refers to as *Solving for Pattern*. He writes, “A good solution is good because it is in harmony with those larger patterns – and this harmony will, I think, be found to have a nature of analogy. A good solution acts within the larger pattern the way a healthy organ acts within the body.”³

The pattern of the dominant pattern of today’s global food system is an industrial pattern which is rooted in the mechanistic worldview that emerged during the 18th century. The philosophers of the *Enlightenment* viewed the world as complex mechanism. The pattern of the industrial food system emerged from that worldview as a large, complex machine with many interrelated but interchangeable parts. On the other hand, the natural ecosystems and social cultures within which food systems exist and must function are living systems, not machines – organisms rather than mechanisms. Organisms are unique, inseparable wholes composed of unique, irreplaceable parts or organs. Organisms also have emergent properties that are not present in their parts – the most important being “life.” A healthy farm, for example is an organism – an integral living whole composed of soil, plants, animal, and people.

The failures of the current food system are inevitable consequences of the inherent disharmony between the mechanistic industrial systems of farming and food production and the organismic social and ecological environment within which the food system must function. The internal mechanism is in conflict with the external social and ecological organisms within which food systems exist and must function. The only way to solve the wicked problems of short-run food security and long-run sustainability is to shift away from the mechanistic industrial system of food production and shift to an organismic sustainable system of food production. The food system must function as a “healthy organ within the living body of society and nature.”

Systemic changes eventually change everything. Most people will not accept systemic innovation unless they are convinced that change is not only desirable but is absolutely essential. Systemic innovation in the food system must be preceded by the realization that today’s industrial food system has failed to meet even the first requisite for sustainability: It has failed to meet the basic food needs of the present. In 2013, about one-in-six residents of the US and one-in-eight Canadians were classified as “food insecure.” The prevalence of hunger among children is higher, with about one-in-five US children and one-in-six Canadian children living in food insecure homes.^{4, 5} The industrial food system has failed to meet even the most basic foods needs of those most needy.

In addition, the diets of many Americans are high in calories but lacking in essential nutrients, leading to an epidemic of obesity and other diet-related health problems. Diabetes, heart disease, hypertension, and various diet-related cancers, 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 in public health over the past several decades.⁶ Those who are getting enough calories are not getting enough of the essential nutrients to support health, active lifestyles.

Furthermore, there is virtually no possibility that an industrial food system can meet even the most basic food needs of generations of the future. This bold assertion is confirmed by a 2016 independent study by an International Panel of Experts in Sustainability (IPES). After reviewing more than 350 studies documenting the failures of industrial agriculture and supporting fundamental change, they described the evidence as “overwhelming.”⁷ The study concluded: “Today's food and farming systems have succeeded in supplying large volumes of foods to global markets, but are generating negative outcomes on multiple fronts: widespread degradation of land, water and ecosystems; high GHG emissions; biodiversity losses; persistent hunger and micro-nutrient deficiencies alongside the rapid rise of obesity and diet-related diseases; and livelihood stresses for farmers around the world.”⁸

The report concludes: “What is required is a fundamentally different model of agriculture based on diversifying farms and farming landscapes, replacing chemical inputs, optimizing biodiversity, and stimulating interactions between different species, as part of holistic strategies to build long-term fertility, healthy agro-ecosystems and secure livelihoods. Data shows that these systems can compete with industrial agriculture in terms of total outputs, performing particularly strongly under environmental stress, and delivering production increases in the places where additional food is desperately needed. Diversified agroecological systems can also pave the way for diverse diets and improved health.”⁹

The problems of industrial food systems are ingrained in the industrial pattern of production and cannot be effectively addressed without fundamentally changing the agricultural system. This systemic change will require a fundamental shift in agricultural and food policies, beginning with farm policies. From the IPES report, “The key is to establish political priorities, namely, to support the emergence of alternative systems which are based around fundamentally different logics... Incremental change must not be allowed to divert political attention and political capital away from the more fundamental shift that is urgently needed, and can now be delivered, through a paradigm shift from industrial agriculture to diversified agroecological systems.”¹⁰

The new pattern needed for “agri-food” systems of the future, to borrow a Canadian term, is already emerging around the world in movements carrying the banners of agroecology, permaculture, nature farming, and in North America, organic, ecologic, biodynamic, holistic, and I believe most important, the local food movement. All of these organismic approaches to farming and food production have the potential to balance the ecological, social, and economic dimensions of sustainability to meet the twin challenges of agri-food sustainability: short-run food security and long-run food sovereignty. The IPES report, *From Uniformity to Diversity*, described the scientific evidence supporting the need for a global shift from industrial to sustainable agriculture as “overwhelming.”¹¹

First, however, we need to understand that food insecurity or hunger today is avoidable or discretionary, rather than unavoidable or inevitable – except during natural disasters. We produce more than enough food in the United States and Canada to meet the needs of all and enough globally to provide everyone with enough food. We could also provide more than enough *good* food – meaning safe, wholesome, nutritious food – if we reduced food waste, stopped using food for fuel, fed less grain to livestock, and shifted to sustainable agricultural systems.

Second, elimination of hunger cannot be left to the indifference of markets, the vagaries of charity, or impersonal government programs. Markets provide food for those who are able to earn enough money to pay market prices, which inevitably excludes many who need food. Charity is discretionary and often discriminatory. Government programs dating back to the English Poor Laws of 1601 have failed to solve problems of persistent hunger. Hunger is a reflection of systemic problems imbedded deeply within our food system, economy, and society. Elimination of hunger will require a comprehensive approach that addresses the logistical, economic, demographic, social, and cultural challenges of hunger.

Admittedly, the challenge is formidable but it is not unsurmountable. Innovations that solve big, systemic problems such as hunger begin by finding points of leverage where small, doable actions can lead to large, seemingly impossible effects – like the small trim tab that turns the rudder of a ship, causing the whole ship to change direction. I have proposed a specific approach to addressing hunger in hopes of stimulating a dialogue as to how best to meet the challenge.¹² Local commitments to “community food security” could well provide the trim tab for systemic innovation leading to “solutions for a global food system transformation.”

I believe the first step toward eliminating hunger will be to accept the “right to food” as a basic human right. Markets, charities, and stop-gap hunger programs, while certainly helpful to some, have proven incapable of eliminating hunger. Historically, discretionary hunger emerged from the depersonalization of local economies, when buying and selling replaced personal relationships. Ultimately, discretionary hunger is a reflection of a *lack of caring*. Accepting food as a basic right at the national level might seem impossible – at least for now. However, progressive local *communities* might well accept this responsibility, much as some communities have accepted the challenge of global climate change. The best hope for reestablishing the sense of personal connectedness essential to eliminate hunger is in *caring* communities.

One means I have proposed for meeting our collective responsibility to ensure good food for all is a “Community Food Utility” or CFU. A public utility is a business established to provide a specific “public service.” They are commonly used in the U.S. to provide water, sewer, electricity, natural gas, communication systems, and other essential services. While existing utilities ensure universal access to essential services, they do not ensure that everyone can afford enough of those services to meet their basic needs. Community Food Utilities would not only ensure universal access to food but would also ensure that everyone has enough good food to meet their basic needs – as an essential public service.

CFUs could fill in the persistent gaps left by markets, charities, and impersonal government programs, ensuring that every household in a community could afford enough good food. In 2014, U.S. households at middle income levels spent approximately 15% of their disposable

incomes for food.¹³ One approach to ensuring affordability would be to ensure that every household in the community has the equivalent of 15% of the community's median household income to spend for food. Those households falling below the income threshold could be provided with opportunities to make up the shortfall in income needed for food by contributing local public services. Public services of both economic and non-economic values would be accepted equally. CFU payments for local public services would be based on hours of service rather than economic value, giving everyone an equal opportunity.

CFU payments for services would be made in Community Food Dollars (CF\$s), which could be used only to buy food provided by the CFU. Priority in procuring food for the CFU would be given to local farmers willing to meet local-determined standards that ensure safe, nutritious, appetizing foods produced by sustainable means. The CFU would serve as a "food grid" by procuring foods from non-local producers when necessary to fill in gaps in local production. Priority for non-local procurement would be given to regional suppliers who are willing and able to meet local "good food" standards. Local farmers and providers would be ensured prices sufficient to cover their costs of production plus a reasonable profit, as is the case with existing public utilities. Prices would be negotiated between the CFU and local farmers – much as public utilities regulators negotiate with current public utilities.

Nutrition education would be integrated into all CFU programs to help participants learn to select nutritiously balanced diets for their families and to prepare appetizing meals from the raw and minimally processed foods provided by the CFU. More than 80% of foods purchased in supermarkets and 90% of the cost of restaurant meals in the U.S. are associated with costs of processing, packaging, transportation, energy, taxes, insurance, and services provided by food retailers.¹⁴ By spending CF\$s for raw and minimally processed local foods provided by the CFU, even the lowest income consumers would be able to afford more than enough good food.

CFU foods would be made available to participants by means that ensure physical access to food for everyone and minimize food waste due to a lack of adequate refrigeration or food storage. The needs of children and the elderly and disabled would be given special consideration. The CFU might operate a "community food market" where those without special needs could buy CFU food using CF\$. For those lacking ready access to transportation or refrigeration, delivery options would include periodic deliveries of individually selected CSA-like "food boxes." Home delivery of foods for specific meals would be provided for those that cannot be accommodated with other options. Meal preparation guidelines and basic refrigeration and storage would be provided to accommodate the various delivery options and specific needs to participants. The CFU would coordinate its functions with local charities and impersonal government programs, such as "food stamps" and "school lunches" to avoid duplication.

As local production expands beyond levels needed to address hunger, the CFU could offer good food to the general community at prices covering full costs of production plus a profit for the CFU. However, the CFU would require continuing commitments of local tax dollars. The key difference between the CFU and existing government programs would be that government officials in caring communities would feel a personal sense of connection with their community, and community members would feel a personal sense of responsibility for each other.

The CFU would operate as efficiently as possible, but would not compromise its commitment to ensuring that all in the community have enough good food to meet their basic needs. As “trim tab” communities eliminate hunger, the “rudder” of public policy will begin to shift, and the “ship of state” will turn toward global food sovereignty. Eventually, there will be good food for all, not just the hungry. However, hunger cannot be eliminated as long as the quest for economic efficiency deprives the poor of their basic human right to enough good food.

Ultimately, effective governance will be absolutely necessary to ensure short-run domestic food security, as well as long-run global food sustainability. Farm and food policy has been a priority of every civilized nation in human history – when food policies have failed, nations have failed. Contrary to popular opinion, the current industrial agricultural system is not a natural consequence of free markets, but instead is the consequence of a premeditated shift in agricultural policies. U.S. farm policies from the 1930s through the 1960s were premised on the proposition that food security could best be assured by keeping independent family farmers on the land. However, U.S. farm policy was fundamentally changed during the early 1970s, as it shifted from supporting family farms to promoting the industrialization of agriculture. The objective was to make good food affordable for everyone. The policies succeeded in producing more *cheap food*, but it didn’t provide good food for the hungry and it is destroying the foundation for future agricultural productivity.

The new pattern for sustainable farm and food policies is already emerging from the global movement called *food sovereignty*. The term was coined in 1996 by Via Campesina, which is an alliance of 148 international organizations.¹⁵ Food sovereignty is defined as “the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems.”¹⁶ While the current food sovereignty movement focuses on change in policy at national and international levels, the basic principles are just as valid as guides to community food security.

Ensuring *enough good food* as a basic human right would not only eliminate hunger but also would address a fundamental flaw in the current sustainable food movement. Organic and local foods both tend to be viewed as elitist movements, driven by those who can afford the higher costs of foods that are not only fresh, flavorful, and nutritious, but also produced with ecological and social integrity. However, a sustainable food system must meet the basic food needs of all, not just those who can afford the full social and ecological costs of authentically “good food.” Critics of industrial agriculture thus far have focused primarily on the negative ecological and social impacts of industrial agriculture. However, the failure to provide food security is perhaps its greatest failure. A commitment to eliminating hunger and malnutrition could well be the public issues needed to bring widespread public support for the systemic innovation needed to fundamentally transform today’s industrial food system into a sustainable food system that is capable of meeting the needs of all of the present as well as the future.

And finally, back to the need for “love” – in addition to innovation – for sustainability. The persistence of hunger and growing ecological and societal degradation are ultimately reflections of our collective lack of caring. If we truly loved our neighbors in our communities and our fellow human beings in global society, we wouldn’t be wasting and burning food in our cars that could have fed the hungry. We would work together to find ways to ensure enough good food for

everyone. If we believed in the inherent goodness of humanity and the other living things of the earth, if we loved the whole of life, we would work together and find ways to protect the things of nature upon which the future of humanity depend. The only power on earth that can bring about the essential innovations and transformation in the global food system is the power of love.

End Notes:

¹ Scott Burken, “The best definition of innovation,” <http://scottberkun.com/2013/the-best-definition-of-innovation/>.

² Wikipedia, “Wicked Problem,” https://en.wikipedia.org/wiki/Wicked_problem.

³ Wendell Berry, “Solving for Pattern,” Chapter 9 in *The Gift of Good Land: Further Essays Cultural & Agricultural* (North Point Press, 1981), page 3. http://www.seedbed.org/wp-content/uploads/2013/09/Berry_Solving_for_Pattern.pdf.

⁴ Alisha Coleman-Jensen, Christian Gregory, and Anita Singh, “Household Food Security in the U.S. in 2013,” Economic Research Report No 173, September 2014. <http://www.ers.usda.gov/media/1565415/err173.pdf> (accessed September 15, 2014)

⁵ CBC News, “One in eight Canadian families struggle to put food on tables,” July 2013, <http://www.cbc.ca/news/canada/new-brunswick/1-in-8-canadian-families-struggle-to-put-food-on-table-study-says-1.1346620> (accessed September 15, 2014).

⁶ J Levi, LM Segal, R. St. Laurent R and Kohn D, Robert Woods Johnson Foundation, “F as in Fat; How Obesity Threatens America’s Future,” <http://www.rwjf.org/en/research-publications/find-rwjf-research/2011/07/f-as-in-fat.html>.

⁷ Andrea Germanos, “Overwhelming’ Evidence Shows Path is Clear: It’s Time to Ditch Industrial Agriculture for Good” *Common Dreams*, Thursday, June 02, 2016,

http://www.commondreams.org/news/2016/06/02/overwhelming-evidence-shows-path-clear-its-time-ditch-industrial-agriculture-good?utm_campaign=shareaholic&utm_medium=facebook&utm_source=socialnetwork

⁸ IPES – Food, International Panel of Experts on Sustainability, *From Uniformity to Diversity: A paradigm shift from industrial agriculture to diversified agroecological systems*, June 2016, http://www.ipes-food.org/images/Reports/UniformityToDiversity_FullReport.pdf

⁹ IPES –Food, *From Uniformity to Diversity*.

¹⁰ IPES –Food, *From Uniformity to Diversity*.

¹¹ International Panel of Experts on Sustainability – *Food, From Uniformity to Diversity: A paradigm shift from industrial agriculture to diversified agroecological systems*, June 2016, page 6. http://www.ipes-food.org/images/Reports/UniformityToDiversity_FullReport.pdf

¹² John Ikerd, The Economic Pamphleteer, “How do we ensure good food for all?” significant portions of this section were taken from the second of two related columns in the *Journal of Agriculture, Food Systems, and Community Development*. First column, August 2016, – second column, forthcoming.

<http://www.agdevjournal.com/current-issue/664-ikerd-column-good-food-for-all.html?catid=230%3Acolumn>

¹³ U.S. Dept. of Agriculture, Economic Research Service, “Ag and Food Statistics: Charting the Essentials,” Aug. 2016, <http://www.ers.usda.gov/data-products/ag-and-food-statistics-charting-the-essentials/food-prices-and-spending.aspx>.

¹⁴ USDA, ERS, Ag and Food Statistics, Aug 2016.

¹⁵ Wikipedia, “Via Campesina,” http://en.wikipedia.org/wiki/Via_Campesina.

¹⁶ Nyeleni Forum on Food Sovereignty, “Declaration of Nyeleni,” February 27, 2007, <http://nyeleni.org/spip.php?article290>.