

Principles for Framing a Healthy Food System

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Wicked problems are most simply defined as ones that are impossible to solve. In other words, the range of complex interacting influences and effects; the influence of human values in all their range; and the constantly changing conditions in which the problem exists guarantee that what we strive to do is improve the situation rather than solve the wicked problem. This does not mean that we cannot move a long way toward resolving the problem but simply that there is no clean endpoint. This commentary outlines principles that could be used in moving us toward a healthy food system within the framework of it presenting as a wicked problem.

KEYWORDS *food system, sustainability, health, Local, food security, wicked problem*

INTRODUCTION

This commentary is not an attempt to definitively develop a healthy food system model. I think this is neither possible nor practical. Rather, it is my intention to portray the process of moving toward a healthy food system as a wicked problem while suggesting a set of guidelines under which we can proceed to identify strategies for markedly improving the situation.

No one would argue that the world has dramatically changed in the last 50 years. I have vacation pictures from my childhood on the Washington Mall in DC in which the only people in the panoramic picture are me, my

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sister, and my mom (Dad was taking the pictures). Taking that picture today would be virtually impossible without shutting the Mall—the population has grown dramatically since the mid-1950s and with it has matured a broad set of issues related to environmental sustainability, social equity, and economic viability. This is nowhere more evident than in our food system. Other articles in this issue will discuss the current problems; I will attempt to structure a strategy for visualizing a more healthy food system; that is, one in which all members of our society had daily access to a diet that allowed for a full life as it is impacted by food; that did not deplete our natural resource base for future generations; and that allowed for a sustainable livelihood by those involved in producing, processing, distributing, preparing, and managing waste for our daily food supply.

I would argue that we often try to turn this into a simple or tame problem, one in which if we just move from point A to point D through B and C we will get there. A tame problem can be categorized as shown in Table 1.¹ There is a clear definition of the problem and solution: we can define a desired outcome that virtually all would agree upon, a reasonable path to get there, and it won't change dramatically over time. The roles of stakeholders are pretty clear and we know when we are done. But such issues as the current debates over health care, global warming, energy, and the financial sector illustrate that many of the problems confronting us as a society

TABLE 1 Summary of Differences Between Tame Problems and Wicked Problems*

Characteristic	Tame problem	Wicked problem
The problem	The clear definition of the problem also unveils the solution. The solution is determined according to criteria revealing the degree of effect: goal is achieved fully or partially, outcome is true or false	No agreement exists about what the problem is. Each attempt to create a solution changes the problem. The solution is not true or false—the end is assessed as better or worse or good enough
Role of stakeholders	The causes of a problem are determined primarily by experts using scientific data (eg, clinical trials)	Many stakeholders are likely to have differing ideas about what the real problem is and what its causes are
The stopping role	The task is complete when the problem is solved	The end is determined either by stakeholders, political forces, and resource availability or a combination thereof
Nature of the problem	The problem is like other problems for which there are scientifically based protocols that guide the choice of solution(s)	Solution(s) to problem is (are) based on judgments of multiple stakeholders; there is no best practice. Every problem is unique and solutions must be tailored

*Taken from Kreuter et al.¹

TABLE 2 Principles for a Healthy Food System

Insure community food security for all residents
Be community based
Be locally integrated
Be reasonably seasonal in nature
Present primarily opportunities rather than problems
Connect healthy across the layers of the system
Be diverse

are not that simple; even defining the problem can be a challenge. As the problem becomes much more complicated and solutions involve tests of people's beliefs, attitudes, and values, many different ideas about the extent and definition of the problem occur.

I would like to suggest the 7 principles in Table 2 as touchstones that would be endemic to a healthy food system and consider strategies for improving the situation in the United States.

PRINCIPLES FOR MOVING TOWARD A HEALTHY FOOD SYSTEM

Principle 1: It Would Insure Community Food Security for All Residents

Community food security can be defined as "all community residents obtaining a culturally acceptable, nutritionally adequate diet through a sustainable food system that maximizes community self-reliance and social justice."² (p. 37) I put this as the first principle because it incorporates elements of the other six. It is not clear that all those who would consider themselves part of the "food movement" today would agree with this as a principle. This principle argues against a strictly local diet simply on the basis of diets being culturally appropriate. Many residents of the upper Midwest and Northeast, for example, identify with more tropical cultures and the foods produced there; these regions cannot grow many of these crops without massive inputs of energy and material (mangoes come to mind). It seems a nonsequitor to contend that a healthy food system would not recognize food as a major descriptor of culture and that though we all have a common bond as US residents and citizens, many are also intimately connected to the cultures from which they originate. Given that the United States has never signed the UN Declaration on Human Rights³ and hence never agreed that food is a human right, it is likely that many will disagree on maximizing social justice.

Thus, though the principle would probably prove contentious from a variety of perspectives, it seems that any internal consistency in suggesting approaches to a healthy food system would need to recognize the need for a principle such as this.

Principle 2: It Would Be Community Based

A healthy food system within a sustainability context implies that steps taken to improve the situation also serve to improve the connectivity between, and joint resolution of, problems that need improvement. In this context I am using community in the sense of place and the people, institutions, natural resources, and human networks that comprise that place. A community-based approach implies that there are networks of people and institutions within the community that are helping to insure that everyone in their community is food secure and that resources are stewarded for both present and future generations. However, it also goes beyond an intrinsic focus on the food system per se, utilizing the food system as a tool for improving conditions in other facets of a community. The advantages to taking a community-based approach in the move toward a healthy food system are that it provides opportunities to approach myriad other issues that confront communities across the country on a daily basis. For example, the preservation of open space is a topic of great interest and considered important by many for reasons unrelated to food and the food system. A number of land trusts, purchase-of-development-rights programs, and other vehicle for preserving land in perpetuity have succeeded in preserving hundreds of thousands of acres of open space—much of it farmland—over the last 20 years.⁴ However, this has not meant in all cases that the land has been utilized in the best way to produce agricultural crops, becoming a low-cost way for people of means to develop an estate at below market cost. Linking the preservation of agricultural lands to a community-based food system injects into the conversation the notion of insuring that the land remains productive and useful for food (or other agricultural products) production.⁵

Thus, other priorities and activities in a community can become interwoven with a community's food system in a manner that achieves multiple goals and thus increases the efficiency of problem resolution.

Principle 3: It Would Be Locally Integrated

In moving towards a healthy and sustainable food system, I think the term *locally integrated* better captures the notion intended rather than *local* when referring to product sourcing expectations. For various reasons, including those outlined above, it is not reasonable to think all of our food will come from local sources. I do not wish that upon myself. Hurricanes, floods, and droughts in one locale make us grateful that we have a food distribution infrastructure that can move food across large distances to places of need. No one wishes New Orleans, Louisiana, or Houston, Texas, to starve when a hurricane strikes. Those of us going back generations in this country, and not necessarily tied to any particular ethnic tradition, often enjoy the cuisine of cultures from across the globe—many requiring ingredients

not able to be grown in many parts of the country. For these and other reasons it makes sense that the movement toward a healthy food system does not completely negate global or transcontinental trade. A focus on locally integrated sourcing does imply that the scales have tipped precariously far in the direction of destroying the capacity to produce food within a given region or locale in many places across the country. Thus, locally integrated implies that there is a dynamic blend of local, regional, national, and global supply. The question becomes how do we judge the nature of the blend? This is a nontrivial task that must be contextualized to the locale and community; in areas such as the Northeast with a high population density compared to the quantity of farmland, the degree to which localization can occur is different from a region like the Great Lakes with relatively low population density overall compared to the amount of farmland. Recent research is developing tools to help us understand the potential localness in the mix of locally integrated.⁶ As a starting point, I think that there are criteria we can apply that keep it simple, including if we can supply it from the local area, we should. If we cannot then can we source it from the region around the locale (for example, in my area can we get it from the Great Lakes Region?); and if not, then there are national and global supplies.

As we pursue development of a healthy food system, it is also necessary that we think to the future as well as consider what is needed/desired right now. As I have argued previously, the production centers for numerous fresh fruits and vegetables we have today may not be available to the same extent in the future.⁷ Though approximately 50% of our domestic fresh produce currently comes from California, it is not clear that will be the case 20 years from now; the combination of water loss, population growth, and increased competition for land/water make it likely that California will not be able to provide the current levels of product relative to population. In addition, the increased needs to truly provide a healthy diet⁸ make it imperative that we increase production in communities and locales across the country.

Thus, locally integrated product sourcing can be used as a strategy for identifying the mix of source locations to create a healthy food system that also improves sustainability in the long term.

Principle 4: It Would Be Reasonably Seasonal in Nature

Though there are strong cultural and crisis-aversion reasons for not having a food supply entirely local, that does not imply that it should not be more seasonal in nature than is currently seen. For example, though a totally seasonal food supply in a place like the upper Midwest would mean very few fresh items available in January, we can still move along a gradient far further than today's average diet. Though we have come to appreciate and savor all the fresh produce we can buy in full-service supermarkets any time of the year, it is also reasonable to consider being more thoughtful about those purchases. We

have also developed significant technology that allows us to produce a wide variety of crops off-season in a relatively sustainable manner using unheated hoop houses or high tunnels. Popularized by Elliot Coleman⁹ and investigated by researchers at several land grants including Michigan State University,¹⁰ these structures have been demonstrated to allow production of over 30 different vegetables throughout the winter using passive solar systems; that is, no additional use of fossil fuels for heat. In addition, they make it possible to get locally produced warm season crops like tomatoes and peppers several months earlier in the early summer and keep them producing 1 to 1½ months later in the fall. This dramatically expands the concept of what can be done seasonally.

Thus, *more seasonal* need not be a euphemism for no diet variety. We have the ability to enhance the seasonal nature of our diets and explore wonderful tastes as they come along, yet maintain a rich diversity of crops in a locally integrated system throughout the year.

Principle 5: Present Primarily Opportunities Rather Than Problems

Our lives and our communities are in a constant state of change. The move toward a healthy food system with the attributes outlined herein creates tremendous opportunities. A key opportunity that has yet to be embraced throughout the country is that of moving toward a healthy food system as an economic development opportunity. It is clear that expanding the production and distribution of healthy foods, especially a marked increase in consumption of fruits and vegetables, presents significant opportunities to grow businesses and jobs. There are several ways to look at this. Increasing the local sourcing within the existing diet provides an opportunity to create jobs locally.^{11,12} However, this can also create a lost opportunity in communities where the displaced food once came from. A second type of opportunity is to consider improving our diet to meet public health standards. Studies from Iowa¹⁰ and Michigan¹³ demonstrate the potential to expand economic activity through local sourcing of at least a component of an improved diet. The Michigan study identified approximately \$200 million in increase economic activity for the state by meeting about 10% to 15% of the increased need in fruits and vegetables by local sourcing.

Thus, a healthy food system can be seen as an opportunity in communities across the country and collectively for the United States as a whole. It need not be either a problem or a challenge to the status quo but rather a process of change that moves us forward.

Principle 6: Connect “Healthy” Across the Layers of the System

If we start with people, we know that a good percentage of the diseases that we die from have a significant dietary component. So the health of the people that are part of a community's, or our nation's, food system is a

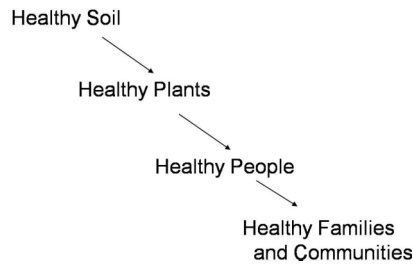


FIGURE 1 Connectedness of “Healthy.”

good place to start in considering health across the layers. As portrayed in Figure 1, health has to extend in both directions from people to the families and communities in which they live, on the one hand, and to the plants, animals, and soil on which they rely on the other. Research largely, although not exclusively, from the land grant institutions over the last several decades has provided an increasingly complex picture of how to develop, maintain, and preserve healthy soil and how that and an ecosystem approach to agriculture can produce healthy plants and animals.^{14–16}

Thus, we can start at any point in the continuum from soil to communities and utilize the concept of health, as it is operationalized within these various layers, to explore the upstream and downstream impacts, helping to improve the health of the entire system.

Principle 7: Be Diverse

Diversity with respect to the food system has numerous dimensions. With respect to the production of food these include scale of operation, range of foods, type of production strategy, and background of the farmers. Though much has been made over the years concerning the small number of farmers who produce most of the food in this country as well as the supposed efficiencies of scale, there are reasons to both question these assumptions and consider that the four dimensions of diversity listed above are a critical component of a future healthy food system and lend vibrancy to a constantly unfolding future.

Though people generally accept that there is an increasing efficiency with increasing scale of production, the data tell a different story. In this issue Mike Duffy explores this notion and comes to a different conclusion: that although there is an increase in efficiency of production with increasing scale up to a point, that point is quickly reached and then efficiency either levels off or declines slightly. In most cases the increase in efficiency takes us into what many have termed the “farms of the middle.”¹⁷ Thus, the most rapidly disappearing scale of agriculture is also the size that is either as efficient as or more efficient than larger-scale agriculture. This is not saying that

we do not need large farms as well; producing 400 billion pounds of food for 300 million people is no small task. But it does imply that forces other than a lack of efficiency are at work to destroy the middle of the scale.

Small-scale and startup farms are not just something to hold onto as a romantic reminder of the way it used to be. They are also an important part of a healthy food system for two reasons: first, they are most often the face of agriculture for large numbers of consumers in the United States. Through farmers markets, community-supported agriculture farms, on-farm farm stands, and other direct-to-market strategies, large numbers of consumers have a connection to their food supply. This does not happen with the largest farms. Second, they can be the starting place for farms that grow to medium or large-scale farms. When it comes to new farmers, whether immigrants with farming backgrounds in their native country or US-born with no farming background, the only viable option is to start small and grow (if desired) over time. The medium-scale farms of tomorrow are typically the small-scale farms of today; a CSA farmer with no farming background in New Jersey starts with about two dozen members and a decade later is feeding 1400 families. Vibrancy, renewal, and growth are predicated on having a diversity of scale at any given time.

These farms have innumerable strategies for producing that food. It is not reasonable to assume that there is one best method for producing any given crop or animal. Weather patterns, rainfall, and other environmental factors make it practical that there will be varied issues to confront; for example, low-humidity areas of the west make it much easier to produce crops organically than the high-humidity areas east of the Mississippi. Encouraging a diversity of production strategies to flourish means that a range of solutions to simple problems will emerge over time and become blended into ever more sustainable solutions. New research and new experiences are constantly increasing our understanding of both the fine points and the veracity of commonly held assumptions. It is thus a strength to have a number of production strategies that incorporate the latest knowledge concerning sustainability while recognizing that strident expectations of one production strategy will not move us into the future.

Thus, diversity in all its forms should be encouraged throughout the food system to maintain a constant ability to react favorably to changing environments.

CONCLUSION

This is not intended to be a comprehensive view of a healthy food system. Though our move toward a more healthy food system is most reasonably viewed as a wicked problem—that is, one for which there is no solution but rather abilities to improve the situation—it is reasonable that we identify

agreeable principles from which to operate. This commentary is intended to illustrate several principles that could be utilized in communities across the country to identify strategies they can use to bring a community together and conceive of moving toward a healthier food system. Finally, it is not intended that any of these seven principles be taken in isolation, rather that they interact and reinforce one another.

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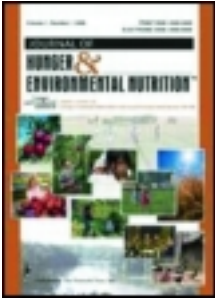
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Publisher: Taylor & Francis

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



Journal of Hunger & Environmental Nutrition

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/when20>

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Version of record first published: 11 Dec 2009

To cite this article: Michael W. Hamm (2009): Principles for Framing a Healthy Food System, Journal of Hunger & Environmental Nutrition, 4:3-4, 241-250

To link to this article: <http://dx.doi.org/10.1080/19320240903321219>

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