

Introduction to Local Food Systems

The local production and marketing of food has reached a critical mass in the past few years. Increasingly, people are searching out food that not only is flavorful, healthy and safe but that also supports their local community. Farmers are working hard to meet that demand and are taking advantage of the economic opportunities community-based, or local, food systems provide. Many farmers, particularly mid-sized (often called “farmers of the middle”) and small-scale producers, find that producing for and selling into a community-based food system is one of the only options left for them, as they lack the scale or financial resources to compete in a larger market. In recognition of the importance of local food systems, the U.S. Department of Agriculture developed the Know Your Farmer, Know Your Food initiative aimed at strengthening the relationships between farmers and consumers throughout the United States. This guide explores the concept of local food systems and provides resources to help farmers, consumers and communities develop food systems that provide for profitable, thriving farms and businesses; steward our natural resources; and strengthen community relationships in rural and urban Missouri.

“Local food system” defined

A local food system expands the economic interactions between food producers and food consumers to include social relationships and environmental management centered on a particular place. A food system includes everything from personal and commercial food production to processing, marketing, distribution, retailing and consumption of food products. In a local food system, all of these activities are rooted in a particular place, whether a community, a metropolitan area or a region. A local food system may focus on particular ways of producing food or may develop alternative marketing channels that connect farmers and consumers. The social, economic and environmental aspects of local food systems are realized in various ways:

- Building social connections, spurring relationships and increasing shared knowledge between farmers and eaters

Written by

Mary Hendrickson, Assistant Professor, Department of Rural Sociology
Sarah Hultine Massengale, Community Development Specialist, Dent County
Crystal Weber, Community Development Specialist, Clay County

Local food system definitions

A major United States Department of Agriculture report on local food systems said no consensus on a definition could be reached. When discussing the concept of local food systems, researchers use different terms, each of which has a slightly different emphasis.

civic agriculture The joining, within a community, of consumption activities with community-based agriculture and food production activities that provide fresh, safe, locally produced foods; create jobs; encourage entrepreneurship; and strengthen community identity (Lyson 2004, 2).

community food security A sustainable food system that maximizes community self-reliance and social justice and makes a safe, culturally acceptable, nutritionally adequate diet available to community residents (Hamm and Bellows 2003, 37).

community food system The integration of sustainable food production, processing, distribution and consumption to enhance the environmental, economic, social and nutritional health of a particular place (Feenstra 2002, 2).

local food system Often defined “based on marketing arrangements, such as farmers selling directly to people at farmers’ markets or to schools” (Martinez et al. 2010, i). For us, a local food system comprises the interrelated social, economic and environmental aspects of bringing together food producers and food consumers in a particular place.

- Creating economic opportunities for food producers through the development of localized and regionalized marketplaces
- Strengthening environmental stewardship of food producers and distributors by reducing the use of natural resources needed to transport and market food items outside of their geographic area of origin.

Research suggests that, in general, community food systems have several attributes: They are community-centered, relational, place-based, participatory, healthy, inclusive of local people and supportive of the local economy.

Benefits of local food systems

The benefits of local food systems are much more than just the availability of food grown closer to home.

Consumers benefit from food that reaches their kitchens more quickly after harvest, which can help to ensure fresher flavor and decreased transportation costs. Buying locally grown food often means knowing the farmer or producer and having a clearer understanding of how food was grown or processed. In addition, buying local gives consumers an appreciation for the quality of seasonal food. Eating seasonal foods can raise awareness of healthier eating and may encourage the development of increased knowledge and skills in food preservation and cooking techniques, which in turn can further enhance the perceived value of locally grown seasonal produce.

Farmers benefit because personal relationships with local residents and regional purchasers may lead to alternative market opportunities that can increase sales and farm profits, creating a more diversified income for the farmer. By talking with local residents, farmers can identify new crops to raise to meet consumer demand and diversify their production and market opportunities for a more stable farming operation. Supporting local food systems supports local knowledge of farming techniques and provides opportunities for younger generations of potential farmers to enter into farming on a small scale. The costs of large-scale or commodity farming can be prohibitive to new farmers, whereas beginning as a local food producer and building a business in small steps can be more affordable. Finally, producing and marketing food in a local food system requires skills in various production methods, face-to-face marketing and new distribution models, and thus encourages farmers to increase their skills or recruit employees or family members into the farming business.

Communities benefit because supporting local food systems means supporting local economies. Buying from local farmers means food dollars stay in the community instead of flowing out to other states and countries. Local farms employ family members, neighbors, youth and other community residents. Supporting local food systems also means supporting business development. Local food systems need productive, entrepreneurial, innovative farmers; community facilities for processing and packaging products; transportation and marketing infrastructure; and consumers, all of which help build a stronger local economy. Growing and purchasing food in a local system increases food safety and security because food grown in the community is less likely to be disrupted by transportation issues, large-scale foodborne illness outbreaks, weather and high fuel costs.

Local food systems build community social structure by supporting the development of new personal relationships between farmers and their customers and new business relationships between farmers, grocery stores and restaurants. They can provide opportunities for developing social relationships at food-related events such as farmers markets, community gardens and u-pick farms. They also provide opportunities for local residents to talk with local farmers about production methods and to support environmental stewardship by spending their food dollars on products that may be grown more sustainably. Farmers

can also teach people about the benefits of using organic methods, fewer chemicals and less tillage; and focusing on whole-farm systems that rely on natural processes to increase yields and reduce costs.

Building resilient communities

An additional benefit of local food systems is the opportunity for communities to be better prepared to withstand future challenges that could affect food supply. As our nation deals with increasing natural disasters, economic issues and international conflicts, the quantity and quality of food for U.S. consumers can be impacted significantly. In recent years, drought, flooding, tornadoes and late freezes have damaged many acres of food production land in the U.S. In addition, food safety scares with E. coli and other foodborne illnesses have sparked concern over the nation's food supply. Communities that have a stronger local food supply — through local farmers, community gardens, food preservation and regional food hubs, or local product aggregation sites — are better positioned to maintain a stable, safe food supply in the event of a disaster. Communities with local food systems also know how to deal with local conditions and can better respond to challenges affecting food production in their local regions. Access to safe, local and consistent food creates more resilient communities able to respond and recover when challenges occur.

Tiers of the food system

The Tiers of the Food System model provides a framework for thinking about food systems (Figure 1). In localized or regionalized food systems, the primary focus is on Tiers 0–2.

Tier 0: Personal production of food

The most local level of the food system is Tier 0. In this tier, we are connected in the most basic way to our food because we produce it, cook or preserve it and then eat it. Tier 0 includes home and community gardens, hunting and fishing, and home food preservation. Home gardeners can grow their food based on their families' needs and likes, harvest fresh from the garden, increase their knowledge of the benefits of eating seasonally and help others recognize the skill and effort needed for food production. In community gardens, residents share gardening techniques and knowledge while growing food for their community in a shared setting. By preserving homegrown foods, families have more consistent sources of healthy produce throughout the year, may reduce their food waste and costs, and may increase the security of their food supply.

Tier 1: Direct relationships between farmers and eaters

Direct relationships between the people who grow the food (farmers) and the people who eat the food (consumers or eaters) characterize Tier 1 of the food system. In Tier 1, food producers are direct marketers, selling locally

grown and produced foods at farmers markets, roadside stands and u-pick operations, roadside stands and through community supported agriculture (CSA) farms. Often regarded as the oldest form of commerce, farmers markets offer producers a way to sell small volumes of product at a price they set themselves. Roadside stands and u-pick operations offer an easier form of marketing for farmers, allowing them to move products from the field to an on-farm location for sale and to invite people onto the farm to make their purchases. CSAs offer the most complex example of a Tier 1 relationship between farmer and eater. Local residents invest in a farming operation or collective of farms, share the production risks and reap the benefits of the growing season. This form of relationship is more complex because it may require a signed contract, up-front payment for an entire season's worth of product and on-farm working experiences for CSA members. The Tier 1 relationship between farmers and consumers often results in the development of lasting relationships and an exchange of knowledge that strengthens the local food system.

Tier 2: Moving beyond direct farmer-eater relationships

In Tier 2, the goal is to make locally or regionally produced food products available in as many outlets as possible because not every consumer has the time, knowledge or desire for direct relationships with farmers. Although many people enjoy participating in CSAs and farmers markets, others want the convenience of accessing locally and regionally produced foods in grocery stores, local restaurants or hospital and school food services. Some farmers prefer to produce a few products they can market in larger volumes, create niche markets or create value by developing a place-based food system. In Tier 2, locally produced food moves from the farm, either direct-marketed by the producer or via a distributor, through different marketing channels such as grocery stores, restaurants and institutional food services, such as those in schools and hospitals. Moving food through these channels benefits consumers by providing *food from a farmer* in places they can access easily in many different situations. Moving from direct-marketing relationships into Tier 2 is often called “scaling up local food systems” because farmers must produce a larger volume of food products packed, packaged or processed in ways that grocery buyers or distributors will accept. This scaling up can require new facilities for packing, processing and bringing together food products from multiple producers. Selling to grocery stores or institutional food services often requires farmers to develop new business skills or increase their operational capacity, and can require grocers, food distributors and food service directors to adapt their purchasing processes to locate

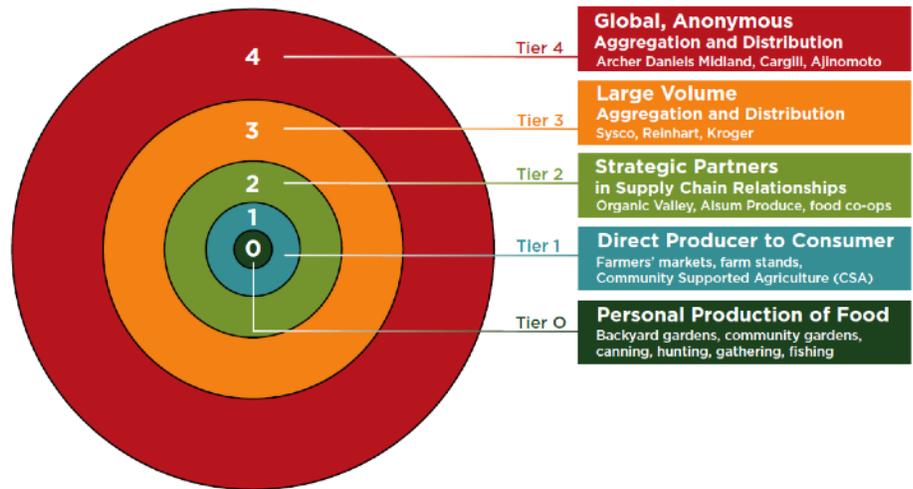


Figure 1. The tiers of the food system range from homegrown foods to globally distributed foods that originated in numerous places. (Reproduced by permission from Bower et al. 2010.)

sources of locally produced foods that may only be available seasonally.

According to Bower, Doetch and Stevenson (2010, 2), “A commitment to fairly sharing risks and profits across the supply chain sets Tier 2 businesses apart from larger counterparts. Tier 2 businesses typically embrace Tier 1 values, and their customers may be willing to pay more for adherence to these values. Products can often be traced back to the farms where they were grown, and farm identity and values are communicated to consumers through labeling and point-of-sale merchandising.” Thus it is also important to develop identification systems that help consumers know that they are buying or eating food that is produced by farmers in their area and meets their demands for taste, quality and safety.

Food system terminology

food value chain “Business networks that rely on coordination between food producers, distributors and sellers to achieve common financial and social goals.” (Diamond and Barham 2012, 1)

scaling up local food systems The development of production and organizational capacity across the food value chain to move locally or regionally produced foods into mainstream markets. For example, farmers may have to produce larger quantities of consistent products that they can combine with other producers’ products to serve larger-volume markets, such as grocery stores or restaurants.

urban agriculture “Growing and raising food crops and animals in an urban setting for the purpose of feeding local populations. Cities choose to narrow and focus this definition in various ways, often categorizing urban agriculture as one or more of the following: community gardens, commercial gardens, community supported agriculture, farmers markets, personal gardens, and urban farms.” (Goldstein et al. 2011, 4)

Table 1. Benefits and challenges of participation in various tiers of the food system.

	Benefits	Challenges
Tier 0		
Consumers	<ul style="list-style-type: none"> Individual food tastes can be addressed. Costs of food access may be reduced. A real connection to one's food may be created. 	<ul style="list-style-type: none"> Requires some knowledge and skills, time, space, and money for tools and other resources.
Farmers	<ul style="list-style-type: none"> Consumers who garden or hunt are likely to better appreciate the effort of growing food and thus be more willing to pay for high-quality food grown locally. Gardening can be an educational transition for people considering producing food in larger quantities, potentially increasing the number of farmers available to provide locally grown produce. 	<ul style="list-style-type: none"> Farmers participating in local food systems often already grow their own food. People who grow their own food may purchase less from local farmers.
Communities	<ul style="list-style-type: none"> Home gardening increases the amount of food available in an area. Community gardening increases food access and social interaction, as community gardeners often share skills, build connections and help one another. Gardening, hunting and food preservation can help promote and preserve the heritage of a community through use of traditional foods or production methods. 	<ul style="list-style-type: none"> Local government may need to consider adopting planning or zoning ordinances that support or encourage gardens in place of traditional lawns and that address health concerns related to livestock within city limits or other issues that may arise from gardening within city limits. Community gardens require significant leadership and volunteer commitment for success.
Tier 1		
Consumers	<ul style="list-style-type: none"> Direct communication with producers promotes an exchange of food knowledge. Buying at local markets creates a connection to place. 	<ul style="list-style-type: none"> Markets often are not open every day and operate only in particular places, and so are less convenient for consumers with limited time. Low-income residents may have limited access to products because the products may command a premium price and the markets are often located far from their neighborhoods.
Farmers	<ul style="list-style-type: none"> Low-risk entry for direct marketers. Farmers can command retail rather than wholesale prices. Food producers establish direct relationships with local citizens at farmers markets, CSAs or on-farm stands. Working with smaller volumes of product, local food producers can test new products more easily than can large-volume producers involved in commodity production. 	<ul style="list-style-type: none"> One-on-one market development requires a significant time commitment. Full-time employment is usually not an option due to seasonal product availability. Markets can require excellent management skills, particularly in CSAs. Farmers must produce a large variety of crops in small volumes, reducing their ability to specialize.
Communities	<ul style="list-style-type: none"> Relationship development in production and sales leads to stronger community ties and generates increased understanding and support for local entrepreneurs. Local production can increase land stewardship through reliance on alternative production methods for a diverse set of crops and livestock, which in turn enhances biodiversity. Farmers markets may attract customers to the local business community. 	<ul style="list-style-type: none"> Communities must have organizational support and enough customers to sustain a market. Markets compete for vendors in areas with few farmers or food producers. Communities may saturate market opportunities with too many farmers markets.
Tier 2		
Consumers	<ul style="list-style-type: none"> More outlets carry locally produced foods that incorporate consumer-desired values — such as sustainable, humane, grass-fed or organic — thus providing more options for consumers to buy foods grown in manners consistent with their values. 	<ul style="list-style-type: none"> Product information may be derived from product label claims and product marketing rather than directly from food producers. Consumers have no personal relationships with farmers with whom they can discuss questions or problems.
Farmers	<ul style="list-style-type: none"> Wholesale regional markets can verify the source of their foods and move products to more customers, potentially enabling farms to lower their average production cost per unit. Farmers have opportunities to diversify market outlets. 	<ul style="list-style-type: none"> Farmers may need to invest significant capital in equipment for sorting, packaging, processing and distributing products. The potential disconnect between farmer and eater may lessen potential profits if partnerships are not successful. Selling at wholesale rather than retail prices may be less profitable overall.
Communities	<ul style="list-style-type: none"> Several businesses can be strengthened or built, including produce and other food distributors, slaughterhouses and value-added meat processors, locally owned restaurants, packaging suppliers and third-party suppliers. 	<ul style="list-style-type: none"> Facilities and processes are needed to process, package and store products and to ease their movement from local farms and food producers to local businesses.

Tiers 3 and 4: Not just local food systems

Tier 2 relationships may not be appropriate for some farmers or food-based businesses, especially those that wish to deal in larger volumes of source-verified, differentiated agricultural and food products. Some of these opportunities and relationships can be identified in Tier 3. As Bower, Doetch and Stevenson (2010, 2) note, Tier 3 “involves highly efficient transactions by companies whose brands have widespread recognition. Efficiencies and lower prices are typically more important at this level than the values embraced in Tiers 1 and 2. While relationships with farms are usually lost at this level, Tier 3 businesses often work to cultivate positive relationships with their customers.” Farmers seek to build partnerships with distributors, processors, wholesalers and others in the business that fairly reward work across the value chain. They can maintain brand identity as members of a group collectively selling differentiated products like organic milk or humanely raised livestock. Nationally recognized businesses can source large volumes of consistent-quality products on which they can base their market position. A good example of Tier 3 is Chipotle, a fast-food restaurant that sources locally grown vegetables and sustainably and humanely raised meat products from farmer cooperative or marketing associations when available. However, these source-verified suppliers are not stipulated to any geographic location and not all can meet the high-volume needs of a nation chain.

Most food that is produced and consumed in the United States does not move through Tiers 0–3. Instead, most consumers, farmers and food businesses participate in Tier 4, which is based on producing large volumes of undifferentiated commodities for global markets. Raw and processed foods are traded within the global market and move anonymously within international trade partnerships. This tier is sometimes referred to as the conventional market and is discussed widely in extension resources.

The role of community in local food systems

Rural communities

Although many benefits of local food systems are common for both urban and rural communities, rural communities can uniquely benefit from a vibrant local food system. Rural areas have a historic precedence for food production — whether on farms or in home gardens — and often the knowledge and infrastructure necessary for food production is more readily available from family members, neighbors and businesses. The history of agriculture in a community can be also be used to support agritourism ventures, such as wineries and u-pick farms, and marketing of locally produced food to both residents and tourists. The increasing demand for locally produced food in urban areas provides a significant economic opportunity for rural farmers to increase food production for urban consumers located in the region. This encourages local entrepreneurs to develop production, marketing, processing and

distribution operations that capitalize on this increased demand for locally produced food.

Local leadership, governments and nonprofit organizations can play a significant role in building a strong rural local food system. Access to fresh, healthy food can be a challenge for residents living outside city limits in more isolated areas of rural counties, with limited transportation options, fewer grocery stores and lower median incomes than other parts of the state. Community leaders can initiate improved transportation options, encourage and support development of farmers markets and other food venues near common service sites such as WIC clinics, rural hospitals, and senior centers, and provide in-kind services to develop community gardens. Supporting business development through policies and incentives can help new farmers in rural areas expand their businesses to reach more rural customers. Churches, garden clubs, community betterment groups and many other rural organizations can provide volunteer support for growing and sharing local food, and help develop farmers markets, community gardens and CSA operations.

A vibrant local food system can be an economic, social, healthful opportunity for rural communities.

Urban or metropolitan areas

Like clean water, unpolluted air and low crime, food is essential to an urban community’s health. A healthy urban food system supports local and regional food producers, creates rural-urban connections, builds localized economies, often promotes environmentally sustainable food production, seeks avenues to educate people about various production types, strives to increase access to healthy foods for all community residents, and seeks ways to make healthy foods the easy choice.

A healthy urban food system addresses many aspects of urban communities and urban life. Urban planners and business development groups often incorporate farmers markets and grocery stores into new developments as community attractions. Neighborhood groups, homeowners associations and social service organizations establish community gardens to increase access to healthy, affordable foods. Community organizations and health care providers advocate for healthy food projects and work to increase consumer access to fresh foods. Community governments seek new methods of building communities through support of local food production policies.

Recently, these activities have spurred growth in the area of urban food production known as “urban agriculture.” Consumer demand for fresh, local products has created business opportunities for residents to turn unused residential lots into urban farms. Schools have addressed healthy lifestyle education with schoolyard gardens. The business community has begun to consider how they can supply locally grown foods. Urban dwellers have pushed for changes in city zoning ordinances to allow for agriculture production, including animal agriculture and sales. These efforts are often noted as a method of fostering community within urban or metropolitan areas.

Yet, even as interest in urban agriculture development increases, it is unrealistic to believe that urban populations will become food secure, or self-reliant, through urban production alone. Urban-rural connections continue to be vital to the health of urban food systems. Urban populations are likely to continue developing relationships with rural food producers, and producers in rural communities are likely to continue finding market opportunities within the populations of urban communities.

Conclusion: Creating local food systems

Local food systems have many benefits for farmers, consumers and communities, but re-embedding food systems in local places takes a wide variety of knowledge, skills and efforts. Across Missouri and across the country, farmers and researchers are experimenting with new crops, new soil management techniques and new varieties and breeds that can help them meet the demands of local markets. Businesses are responding to the demand of local consumers and developing relationships with local farmers to spur increased wholesale availability of local products. Food distributors are developing new strategies to efficiently pick up and deliver locally sourced foods, while also helping farmers guarantee the safety of their food. Individuals, consumer groups and food advocates are creating change by demanding increased availability, becoming educated on the importance of eating local and advocating for healthier, fresh and local food products from farmers.

Local food systems also require different types of infrastructure – from small packing and grading sheds on farms, to food hubs and distribution models, to new storage facilities or retail spaces. Because local food systems are generally small-scale, it is important for participants to thoroughly investigate food safety regulations, economic incentives and tax structures to support their development. Education — from producing in hoop houses to cooking fresh foods — will be a key component of strengthening and enhancing local food systems.

References and resources

Bower, Jim, Ron Doetch, and Steve Stevenson. 2010. *Tiers of the food system: A new way of thinking about local and regional food*. Madison, WI: University of Wisconsin.

<http://www.cias.wisc.edu/wp-content/uploads/2010/09/tiers082610lowres.pdf>.

Day-Farnsworth, Lindsey, Brent McCown, Michelle Miller and Anne Pfeiffer. 2009. *Scaling up: Meeting the demand for local food*. Madison, WI: University of Wisconsin Extension. http://www.cias.wisc.edu/wp-content/uploads/2010/01/baldwin_web_final.pdf.

Diamond, Adam, and James Barham. 2012. *Moving food along the value chain: Innovations in regional food distribution*. Washington, DC: U.S. Department of Agriculture, Agriculture Marketing Service. <http://www.ams.usda.gov/AMSV1.0/getfile?dDocName=STELPRDC5097504>.

Feenstra, Gail. 2002. "Creating space for sustainable food systems: Lessons from the field." *Agriculture and Human Values* 19:99–106. http://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-a-livable-future/_pdf/projects/FPN/academic_literature/Creating_space_for_sustainable_food_systems_Lessons_from_the_eld.pdf.

Garrett, Stephen, and Gail Feenstra. 1999. *Growing a community food system*. Puyallup, WA: Washington State University. <http://smallfarms.wsu.edu/wsuo-pdfs/WREP0135.pdf>.

Goldstein, Mindy, Jennifer Bellis, Sarah Morse, Amelia Myers, and Elizabeth Ura. 2011. *Urban agriculture: A sixteen city survey of urban agriculture practices across the country*. Atlanta, GA: Emory University, Turner Environmental Law Clinic.

Hamm, Michael W., and Anne C. Bellows. 2003. "Community food security and nutrition educators." *Journal of nutrition education and behavior* 35(1):37–43.

Jensen, Jennifer. 2010. *Local and regional food systems for rural futures*. Iowa City, Iowa: Rural Policy Research Institute. http://www.rupri.org/Forms/RUPRI_Rural-Futures-Lab_2010_Food_Systems_for_Rural_Futures.pdf.

Lyson, Thomas. 2004. *Civic agriculture: Reconnecting farm, food and community*. Medford, MA: Tufts University.

Martinez, Steve, Michael Hand, Michelle Da Pra, Susan Pollack, Katherine Ralston, Travis Smith, Stephen Vogel, Shellye Clark, Luanne Lohr, Sarah Low, and Constance Newman. 2010. *Local food systems: Concepts, impacts, and issues*. Washington, DC: U.S. Department of Agriculture, Economic Research Service. <http://www.ers.usda.gov/publications/err-economic-research-report/err97.aspx>.

ALSO FROM MU EXTENSION PUBLICATIONS

G6222 *Selling Strategies for Local Food Producers*

G6223 *Starting and Operating a Farmers Market: Frequently Asked Questions*

MP906 *Community Gardening Toolkit*

extension.missouri.edu | 800-292-0969

UNIVERSITY OF MISSOURI
 Extension

■ Issued in furtherance of the Cooperative Extension Work Acts of May 8 and June 30, 1914, in cooperation with the United States Department of Agriculture. Director, Cooperative Extension, University of Missouri, Columbia, MO 65211 ■ an equal opportunity/ADA institution ■ 573-882-7216 ■ extension.missouri.edu