

# Toward a Just, Nutritious, and Sustainable Food System: The False Dichotomy of Localism versus Supercenterism<sup>1,2</sup>

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*Fast food has taken over the whole country; we know that. The big brands are some of the most important powers, powerful powers, in this country. Supermarkets as well. Big companies. Big companies. Thirty years ago, most of the food was largely local and largely fresh. Now it's largely processed and full of all sorts of additives, extra ingredients, and you know the rest of the story.*

—Jamie Oliver, TV chef (1)

The industrialization of agriculture concurrent with globalization and accompanying trade liberalization has substantially altered the US food landscape. Increasingly, consumers and researchers are confronted by an ostensible dichotomy of local, fresh foods vs. global, processed foods, where “local” is represented by alternative food initiatives such as farmers’ markets (termed here as “localism”) and “global” is represented by supercenters such as Walmart (termed here as “supercenterism”). Popular opinion holds that increases in localism represent nutritional, social, and environmental gains, whereas increases in supercenterism represent a shift toward an unhealthful, unjust, and polluted food system. But the world is not so black and white. For example, in the United States, at least one-half of organic foods are purchased at supermarkets and supercenters (2), and these venues account for a rapidly increasing share of local produce sales (3).

The goal of this commentary is not to be a systematic review of the literature, but to caution against demonizing supercenters and glorifying farmers’ markets. The magnitude and complexity of the problems facing the US food system require that we identify and support opportunities across multiple venues to achieve sustainability. A more nuanced perspective supported by innovative and interdisciplinary research is needed in order to achieve a shared agenda of the following: 1) human health and nutrition, 2) economic viability, 3) social justice, and 4) environmental sustainability.

## Elements of Localism and Supercenterism across Key Domains of a Sustainable Food System

**Human health and nutrition.** Limited evidence suggests that farmers’ markets are associated with increased fruit and vege-

table intake; however, weaknesses of studies on this topic render the evidence inconclusive. For example, a systematic review found that in 4 of 10 studies, providing coupons for farmers’ markets was associated with significant increases in fruit and/or vegetable intake (4). More recently, 2 intervention studies found that introduction of farmers’ markets was linked to increased fruit and vegetable intake, although, notably, both were conducted in small, selective samples and lacked a control group (5, 6). In addition, most studies involve providing coupons to purchase fruits and vegetables at farmers’ markets or only interview patrons of farmers’ markets, thus biasing the results, and others ignore the selectivity of shopping at farmers’ markets; those who shop there might do so because they already have an underlying dietary preference for fruits and vegetables and the ability to access and purchase such foods. Given that other studies have demonstrated that simply introducing food retailers into “food deserts” is not sufficient to improve the healthfulness of purchases (7, 8), randomized, controlled studies of larger, more representative samples are needed to understand the true effects of farmers’ markets on dietary intake. Finally, studies must account for the fact that most US households shop at multiple food retailers (9), and people who purchase produce at farmers’ markets may go elsewhere to buy less healthy foods; thus, measures of overall dietary intake, rather than just fruit and vegetable intake, are needed.

One potential advantage of local food is the maintenance of nutrients in produce, which can diminish during delivery and storage in the industrial supply chain (10, 11). Research suggests that seasonal changes in the nutrient content of produce are greater than nutrient differences between organic and conventionally grown produce (12, 13). Furthermore, consumers report that their primary motivation for purchasing in-season produce is better taste (14). If purchasing produce in season confers the greatest nutritional benefit, efforts to improve nutrition should focus on encouraging seasonal purchasing and promoting the “fresher taste” of such foods, regardless of where consumers shop.

Apart from research on nutritional quality of purchases, evidence concerning the impact of farmers’ markets on health outcomes is scarce and equivocal. One exploratory study found that living within a 1-mi (1.6 km) radius of produce vendors/farmers’ markets was marginally inversely associated with risk of overweight/obesity over time in young girls (15). Two ecologic studies found that farmers’ markets were not significantly associated with obesity rates after accounting for the effects of other food retailers (supercenters and supermarkets) (16, 17). One of these studies also evaluated diabetes and found

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a significant inverse association between farmers' markets and diabetes; the addition of one farmers' market per 1000 residents was associated with a 0.78% lower diabetes rate (17). All of these studies are severely limited by their cross-sectional design; it may be that healthier communities support farmers' markets or healthier people choose to live in communities that have farmers' markets rather than vice versa.

Little is known about the impact of supercenters vs. other food retailers on the nutritional quality of purchases and subsequent health. One epidemiologic study conducted in the early 2000s found that consumers purchased less produce and more processed food at supercenters relative to supermarkets (18). Ecologic studies linking supercenters and obesity are equivocal, with 2 studies finding positive associations between supercenters and obesity (17, 19) and a third finding that supercenters were inversely associated with obesity (20). None of these studies take into account the dramatic changes occurring at food retailers in recent years; in addition to increasing sales of local and organic foods (2, 3, 21), several major retailers have implemented healthy food initiatives (22, 23). Analysis of one such initiative, called Guiding Stars (a nutrition navigation program), found that the proportion of foods purchased with stars (healthier choices) increased from 24.5% to 25.9% over a 2-y period despite no statistically significant change in the proportion of foods offered with stars (24). A more recent evaluation, focused on Walmart's "healthier foods initiative," found that although the nutrient profile of packaged food purchases improved over time, these improvements were not attributable to the initiative (L Smith Taillie, SW Ng, BM Popkin, unpublished results, 2015). Thus, current food retailer initiatives to improve dietary choices of consumers may have only a limited effect on food purchases.

**Economic viability.** Common concerns about supercenterism relate to immediate and downstream consequences for the local economy, including store closures, job loss, and reduction of social capital through reduced opportunities for local entrepreneurs (25–28). However, the evidence as to whether supercenters impart long-term economic damage to local communities is conflicting, with some studies finding supercenter entry is related to decreased employment and sales by local retailers (28, 29) and other studies finding small but positive increases in local jobs with little effect on wages or number of establishments (26, 30, 31).

The introduction of supercenters into local markets may provide benefits to consumers. Harnessing economies of scale, supercenters typically offer lower prices than conventional grocery stores (32, 33), which, in turn, drives down prices at competing stores, especially for produce and dairy (34–36). There is relatively limited data on the price of food at supercenters vs. farmers' markets. Two studies directly assessed prices of commonly consumed fruits and vegetables at farmers' markets vs. conventional grocery stores in the southeastern United States, finding significant variation across counties and cities (37, 39). In the first study, conducted in North Carolina in the summer, the mean price difference between farmers' markets and conventional grocery stores (including Walmart supercenters) ranged from \$0.00 to \$0.38, with small but significant price savings to consumers at farmers' markets in most counties (37). However, this study did not take into account sales, card member discounts, and coupons for produce at conventional grocery stores; thus, it may not accurately reflect consumer purchasing behaviors. In the second study, conducted in 6 southeastern states in the summer and fall, produce prices at

farmers' markets were approximately the same or slightly less than conventional grocery stores (not including Walmart supercenters) in 74% of all cases, but the actual data for these comparisons were not shown (the study was not published in a peer-reviewed journal and was conducted by a pro-local corporation) (38). Another small study in Illinois found that prices of produce were cheaper at supermarkets relative to farmer's markets, although the sample included only 3 farmer's markets and 5 supermarkets (39). Clearly, more research is needed to understand consumer costs across food retailer formats, with an emphasis on capturing geographic variation and consumer purchasing behaviors.

Recent efforts such as the Farmers' Market Nutrition Program in the United States endeavor to make local produce more financially accessible to low-income women, children, and the elderly through provision of vouchers for fruits and vegetables at farmers' markets. However, these programs reach relatively few households, and geographic access poses a barrier to those without a nearby farmers' market that accepts Farmers' Market Nutrition Program checks (40). In addition, stigma around using vouchers at farmers' markets may limit usage, as opposed to swipeable Electronic Benefit Transfer cards, which resemble traditional debit/credit cards (41). Programs led by nongovernmental organizations such as Wholesome Wave's Double Value Coupon Program and Fair Food Network's Double Up Food Bucks are also examples of efforts to make locally produced fruits and vegetables purchased at farmers' markets affordable for low-income consumers. Wholesome Wave's program provides incentives to 40,000 families in 31 states and the District of Columbia to purchase fruits and vegetables at farmers' markets (42). The Fair Food Network's program focuses on Michigan but provides incentives for low-income consumers to purchase fruits and vegetables at both farmers' markets (June to October) and grocery stores (August to November) (43). Currently, it is unclear whether these programs can expand in size and scope to become viable options for more low-income individuals.

Considering that consumers report that low price is one of the top factors driving their decision of where to shop—and this trend has increased since the Great Recession (44)—and that low-income households, particularly black parents and mothers, report that they would like to buy healthier foods such as fresh fruits and vegetables but believe they cannot afford to (45–48), lower prices on produce (49, 50) and subsequent education to overcome perceived cost barriers could translate into improved diet quality across food retailer formats.

**Social justice.** Social justice for farm workers has been a key aspect of the alternative food movement since its inception. Although it is well established that farm workers have poorer health relative to the general population (51, 52), surprisingly little research has compared the health and quality of life of conventional (industrial) vs. small-scale (local) farm workers. An important issue relating to this research is the definition of the comparison group: what are "local," "small-scale," "nonindustrial" farms? The strictures of organic agriculture (53) necessarily limit exposure to synthetic pesticides relative to conventional agriculture, suggesting that one might expect differences in health outcomes among workers, but, to our knowledge, no studies in the United States have explored this research question or how it relates to conventional vs. small-scale farm workers.

The treatment of supercenter workers is also of concern. Supercenters have been heavily criticized for poor labor practices,

including low wages, minimal or nonexistent health and retirement benefits, and antiunion policies (34, 54). According to a 2012 report by the Applied Research Center, 79% of food chain workers do not have paid sick leave and 83% do not receive health insurance coverage (55). The report also highlights a wage gap of \$5675 between white and black food workers and the observation that 3 of 4 managers in the food system are white—the majority of black workers in the food system are concentrated in low-wage jobs (55). Several national chain food retailers, including Costco and Trader Joe's, have received accolades for providing higher wages and better benefits (56, 57), suggesting that it is possible to achieve socially responsible labor policies on a national scale. However, we are a long way from achieving social justice in the food system and the cruel irony remains that many of those working in the food system rely on government assistance to purchase the food they are producing and selling. According to a report prepared by the Democratic Staff of the US House Committee on Education and the Workforce, low wages at a typical 300-employee Walmart supercenter translate to a cost of \$96,000/y per store in US taxpayer dollars to cover costs for employees to enroll in the Supplemental Nutrition Assistance Program (58), not to mention the cost to cover benefits such as health care and child care not provided by their employer. Given that there are 3407 Walmart supercenters in the United States (59), extending these cost estimates to all Walmart stores translates into ~\$327 million/y in US taxpayer dollars to supplement the ability of Walmart's employees to purchase food. Clearly, fair and livable wages are a substantial barrier to achieving social justice in the US food system.

The local movement in the United States necessarily excludes farm workers in low- and middle-income countries who may benefit from exporting to US markets. For example, Walmart increasingly sources directly from small- and medium-sized farmers in low- and middle-income countries. Although data are scarce, a recent independent analysis in Nicaragua reported an increase in household annual income of \$200 (~15% of mean income in the sample) among small-farm workers who participated in the supermarket's supply chains (60). To our knowledge, the impact of shifting food production locally in the United States on the lives of farm workers in low- and middle-income countries has yet to be explored. Relatively more is known about the reverse, e.g., the impact of increasing globalization of the food system. A recent Report of the United Nations Special Rapporteur on the Right to Food concluded that increased regional specialization resulting from globalization concentrated benefits in the hands of a few large farms growing a narrow range of crops, thus, increasing disparities between landless workers and wealthy landowners while also decreasing agrobiodiversity (61). The complex interactions between US food policy and alternative food movements and the livelihoods of farm workers outside the United States need to be further explored.

Recent years have witnessed a shift in the emphasis on social justice in food systems from a focus on social justice for food system workers to social justice for consumers. Whether social justice is achieved then depends on who those consumers are. Farmers' market shoppers tend to be white, educated, with above-average incomes (62, 63), although recent reports suggest that this may be changing in the United States (64, 65). One qualitative study found that although some low-income consumers appreciated qualities of local food systems, many were unaware or unconcerned with perceived attributes of alternative food initiatives (40). Moreover, low-income households often

struggle to manage competing demands of work, transportation, public services, and child care (66, 67). This time scarcity poses a major barrier to shopping at farmers' markets that do not offer a wide assortment of packaged food and nonfood products, necessitating additional trips and increased time cost, as opposed to supercenters, in which a "one-stop shopping" format allows households to purchase all consumer goods at one place (68–71). Promotion of farmers' markets without attention to the values and barriers of low-income consumers can be paternalistic and poses a major barrier to the implementation of food policies in the United States (72).

On the other hand, the rapid growth of supercenters could contribute to increasing disparities in food access. Supercenters tend to open in suburbs (73), making it more challenging for low-income, rural, and inner-city residents to access them. In rural areas, the rapid growth of supercenters has shifted food sales from counties without supercenters to those with supercenters, while at the same time smaller retailers disappear, in effect creating areas with minimal food access ("food deserts") (25, 74–77).

Of great importance to social justice for consumers is food insecurity. Several studies have found that lower food costs are associated with lower risk of food insecurity (78, 79). However, as discussed previously, few studies have evaluated the cost of local vs. conventional foods. One study evaluated the effects of the Farmer's Market Nutrition Program among Supplemental Nutrition Program for Women, Infants, and Children participants and did not find that program participation improved food security (80).

Creating a socially just and accessible food system is complicated. Instead of relying on either supercenters or farmers' markets as a panacea, a more effective approach would identify and leverage elements of low-income consumers' existing value systems that are compatible with strategies to achieve a food system that is sustainable and equitable for consumers across socioeconomic strata.

**Environmental sustainability.** Issues surrounding environmental sustainability also apply to both localism and supercenterism, with neither paradigm offering a comprehensive solution. The local food movement's emphasis on "food miles" is misleading with regard to the environmental impact of food (81). In fact, delivery from producer to retailer contributes only 4% of food life cycle greenhouse gas emissions in the United States (82). The vast majority of greenhouse gases are emitted during the production phase of foods (82, 83), and long-term storage and waste are also important contributors (84). This is an important area that supercenters will need to address, including commitments to reduce plastic bag and packaging waste, reducing food waste, and reducing energy costs of storing food. One example related to this is the fact that 100% of Whole Foods Market's electricity usage comes from renewable sources, whereas only 4% of Walmart's does (85), although they recently announced a commitment to achieve 100% renewable energy by 2020 (86).

Research consistently points to reducing consumption of meat and dairy products (82, 87) and limiting air freight transport (88) as the most effective means to achieve food-associated greenhouse gas emission goals. However, the former approach puts the burden of change on the individual. A more effective approach requires revolutionizing agricultural practices (89, 90) with activities such as soil carbon sequestration (89), sustainable intensification (producing more food with less land while limiting ecosystem damage) (91), agroecologic intensification

(including cover cropping, intercropping, alley cropping, crop rotation, fertilization with animal manure, and biological pest control) (92, 93), and precision agriculture (optimization of inputs using advanced technologies) (94). More research is needed on the consequences of these practices because they may have important ethical and economic trade-offs in addition to mixed environmental impacts.

The “food miles” emphasis also overlooks other important aspects of agriculture, such as water and pesticide use, and species diversity. Again, research points to animal products as having significantly higher water footprints relative to plant products and also supports that grazing systems have smaller water footprints relative to industrial systems (95). Overall, a major limitation of improving the environmental sustainability of the food system is that we do not have a good metric of sustainability; the danger of focusing on food miles and carbon, relatively simple measures, is that other aspects of sustainability are ignored, such as water use. The Barilla Center for Food and Nutrition’s “double pyramid” is a good example, taking into account not only greenhouse gas emissions (e.g., “carbon footprint”) associated with the food system, but also the “water footprint” (e.g., water consumed and/or polluted by the food chain) and “ecologic footprint” (e.g., land needed to provide resources and absorb emissions by the food chain) (96). Food-based climate change mitigation strategies will need to encompass many more dimensions including the way food is produced, processed, distributed, stored, and accessed.

The Scientific Report of the 2015 Dietary Guidelines Advisory Committee is the first US Dietary Guideline Report to highlight the need for food sustainability. While emphasizing that no food group needs to be completely eliminated from the diets of Americans, it states that diets higher in plant-based foods such as vegetables, fruits, legumes, and nuts, and lower in animal-based foods will have a lower environmental impact in terms of greenhouse gases and water, land, and energy use (97). Private governance by retailers will play a key role in achieving environmental gains (98). Indeed, many of the world’s largest retailers already have sustainability commitments (99, 100), but not all have achieved real progress; thus, governmental regulations will also be required.

## Future Directions

Looking ahead to the future, some key questions that need to be addressed include the following:

- What is the best approach for identifying and incorporating the values, norms, and priorities of low-income consumers in the achievement of socially equitable food systems?
- Is it possible to have a food system that is just and sustainable for all stakeholders (producers, retailers, consumers, and the environment, both local and international)? If not, what stakeholder interests do we prioritize?
- Can consumer and academic criticism of corporate social responsibility lead to change in the food system, as is seen in clothing retail [e.g., Nike (101)]?
- What is the relative cost to consumers of local vs. conventional food and how does it vary across the United States?
- What role do different food retailer formats play in achieving food security in the United States?
- Cutting-edge systems approaches can provide insight into viable solutions and should be a focus of future studies (102).

To prioritize the diet quality and health of low-resource individuals, we must recognize limitations of localism that pose barriers to achieving these goals including money cost, time cost, and value systems. Furthermore, given that supercenters are the fastest growing segment of food retail in the United States (44, 103, 104), we must consider working with and from within supercenterism to achieve human health goals while promoting elements that are integral to localism, such as environmental sustainability. More research that takes into account consumers’ shopping patterns across food retailers, and how consumers make trade-offs across domains of nutrition, cost, social justice, and the environment, is needed to identify strategies for food system sustainability. We need to change the way we talk about our food system, recognizing that localism vs. supercenterism is a false dichotomy, and embrace innovative, multisectorial solutions.

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