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Roles of Cities in Creating Healthful Food Systems

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Keywords

food policy, urban food systems, food environments, food planning, food security, social determinants

Abstract

Over the past several decades, cities worldwide have attempted to reconfigure their food systems to improve public health, advance social justice, and promote environmental resilience using diverse municipal policies, often with the support of stakeholder-led governance mechanisms such as food policy councils. This article reviews the roles that cities have played in creating healthful urban food systems and the effects of those policies on public health. It explains that despite wide-ranging policy initiatives, disparities in food insecurity and malnourishment persist. It concludes by describing several promising pathways for urban food policy: engaging in food-focused urban planning to create equitable food environments; treating policies to address inequality and social justice as upstream food policies; considering the effects of new business models such as online food retail in urban food policy making; and using food procurement as a lever to influence regional, national, and global food systems.

INTRODUCTION

Cities have had a long history of influencing the food system to promote health (150). In the nineteenth and early twentieth centuries, cities created food programs in schools to reduce hunger and improve nutrition (4), built wholesale and retail markets to improve food distribution efficiency and food safety (105), banned adulterated milk and opened pasteurized milk dispensaries to protect children's health (111), provided land for subsistence urban farming (87), and operated sanitation departments to collect and manage organic wastes (100). Despite the range of food interventions, however, only within the past several decades have cities begun to treat food as a complex system that warrants distinct planning and urban management by creating governance structures to develop food plans and by enacting policies that target the social, economic, and public health problems caused by the food system (26, 32, 121, 122, 127, 145).

The salience of urban food policy is the result of several factors: recognition that, in an increasingly urbanized world, population health is affected by policies that govern consumption as well as agricultural production; mounting evidence of the global burden of disease caused by food insecurity and malnourishment (4); and the increased vulnerability of the global food system due to climate change-induced stresses, natural resource depletion, and widening economic inequality. In the past several decades, precarious urban food systems and more frequent food crises have pressured city officials to respond with food plans, policies, and programs (82, 107). Activists and researchers have produced policy-relevant evidence that urban food systems are responsible for health disparities, social inequality, and ecological harm, yet they could be designed to promote health, resilience, and social justice.

National partisan politics and the devolution of responsibilities to local governments have led city governments to advance their own food policy initiatives (104). In developing policies, cities deployed powers at their disposal: zoning and land use planning; infrastructure investment; public health regulations; economic development funding; public procurement; education; and sewage and sanitation services. The food policy focus has varied by region on the basis of issue salience and political milieu. In North American cities, the antipoverty movement of the 1960s made visible the persistence of poverty-related hunger and malnourishment, while the more recent emphasis on policies to improve food environments grew in reaction to a 2001 "call to action" by the US Surgeon General "to decrease the incidence of overweight and obesity, which he said had reached 'nationwide epidemic proportions'" (131, p. 1100). A burgeoning local food movement in Europe and the United States also led to policies supporting local food systems and urban agriculture (32). European cities addressed health and equity too but have emphasized shorter food supply chains and diets that reduce carbon emissions, including an increased consumption of "bio" (i.e., organic) food (92). Cities in lower-income countries have had to address all these concerns while also confronting the effects of globalization as investments by multinational food companies began displacing traditional production and distribution systems (11, 15, 126). In recent years, the scope of urban food issues has expanded to include the relationships between cities and their surrounding rural areas and the social determinants of food insecurity and malnourishment, such as income inequality, housing affordability, labor rights, and environmental justice (32).

As cities increasingly adopted food policies, they had to develop new governance mechanisms, such as staff appointed to coordinate the activities of siloed administrative agencies so that food could be managed comprehensively (13). Throughout the United States, Canada, Europe, and Australia, cities supported urban food policy councils composed of multisector stakeholders to discuss public concerns about the food system, propose solutions, and evaluate outcomes (83). Local governments have increasingly codified their goals, objectives, and strategies for food system change in food plans that synthesize proposed initiatives to improve urban food environments (22).

Some cities, such as New York City, have prepared and disseminated food indicators to enable the public to track progress on various dimensions of the food system (56). In virtually all cities, food planning and policy development have been the result of civil society organizations advocating for changes that would make the food system more just and that would use municipal authority over the food system to address social, economic, and public health disparities.

While food policies reflect the distinct histories, political contexts, and legal systems of individual cities (52, 59, 104, 108), they also diffuse across boundaries through transnational networks of cities such as the Milan Urban Food Policy Pact, which commits members to implement policies to address food system problems, or the C-40, which addresses climate change (103, 135), and as a result of international agreements (12, 72) and cross-national networks of advocates and city officials (17, 103). In recent years, cities have attempted to align their food policies to achieve the United Nations Sustainable Development Goals (72). As a result of these networks, agreements, and indicators, problem definitions and policy strategies have converged across many different cities.

URBAN FOOD POLICIES

Cities have intervened to shape both urban and consumer food environments (see **Figure 1**). Urban food environments include all sources of available food in the city: private food establishments (e.g., supermarkets and convenience stores, dollar stores, pharmacies, full-service restaurants, and fast food outlets), public institutions that serve food (e.g., schools, senior centers, correctional facilities), public and private emergency food providers (e.g., food banks, food pantries, soup kitchens), and informal markets (e.g., wet markets, street vendors, mobile vendors). Urban food environments can be measured on the basis of the prevalence of food sources within a geographic area or by more sophisticated measures such as activity spaces, patterns of movements through the city as individuals go about their daily lives that create unique exposures to food establishments (138). Consumer food environments are the experiences people have when they choose to purchase and consume food. They comprise food prices; food marketing; other information consumers use to make food choices; race, ethnicity, or class signifiers that welcome or deter consumers (8); and the sensory and cultural attributes of food itself, all of which shape diets and health (60). As online grocery and social media marketing grow, urban and consumer food environments are increasingly virtual as well as physical, blurring the boundaries between the two environments (61).

The food sector also shapes the urban environment. Food businesses, from manufacturers to restaurants, are large employers and important sources of tax revenue in many cities. Food can shape a city's cultural identity and be a source of tourism. Food influences development and residential patterns and thus affects zoning and land use (27, 28).

Food Safety

National governments regulate the safety of food imports and agricultural production and food distribution systems, but cities, along with state and provincial governments, play important roles in ensuring the integrity of local food production, processing, distribution, and retail and in preventing outbreaks of foodborne illnesses. Municipal food safety policies also affect urban and consumer food environments by shaping infrastructure, the food sector, and consumer behaviors, as the following two examples illustrate.

Cities created municipal wholesale and retail food markets at the turn of the twentieth century to move street vendors into more sanitary enclosed facilities, with water and waste disposal, that could be more easily regulated. This trend continues today in cities with large informal

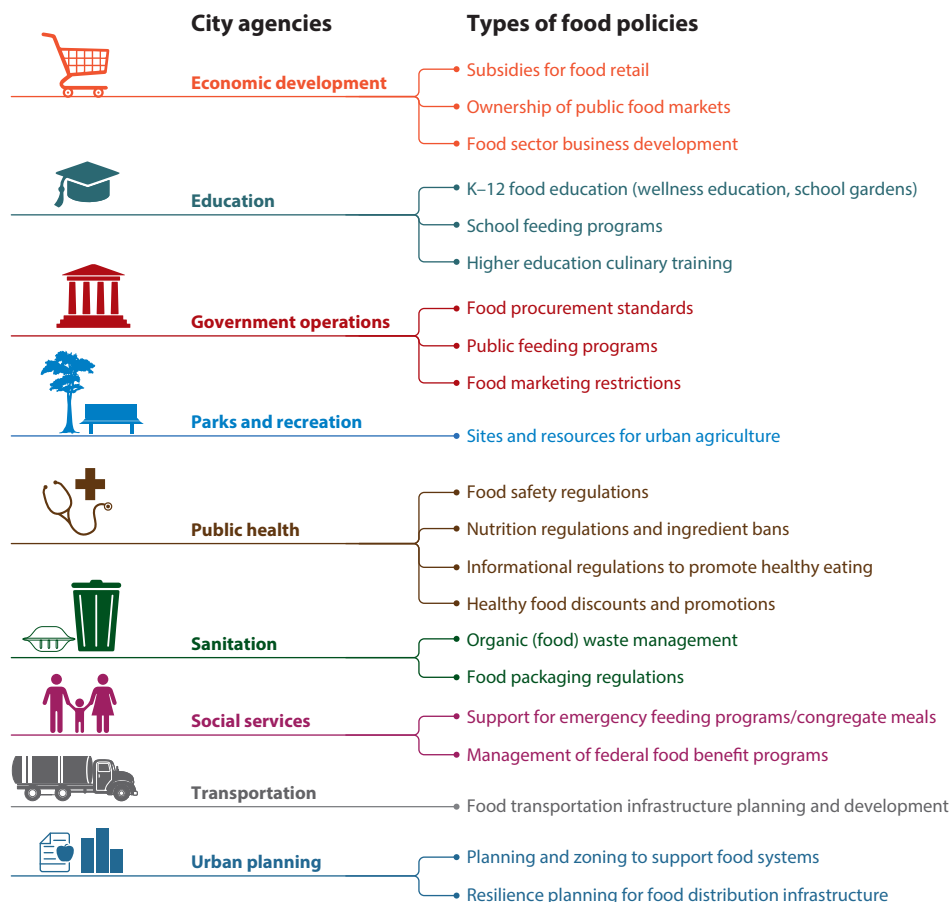


Figure 1

Select urban food policy types by municipal agency. The figure illustrates the range of policies and programs, from food retail subsidies to food waste management, that municipal agencies use to create healthful food systems.

food sectors. Zoning and urban redevelopment are displacing wet markets and other traditional food distribution systems with supermarkets selling food transported via cold-chain compliant distribution channels. This process, which some have termed “supermarketization,” is often rationalized as a food safety measure but disadvantages small farmers and vendors and privileges multinational supermarket chains, potentially contributing to dietary transitions from fresh to ultraprocessed foods (143, 155). Consumption of ultraprocessed foods has been associated with obesity, diabetes, metabolic syndrome, cardiovascular diseases, and mortality (115).

Cities affect consumer food environments by requiring the public disclosure of food safety information to prompt consumer behaviors that cause businesses to improve sanitary practices to avoid a low grade (152). Since 2010, for example, New York City requires restaurants to display a letter grade signifying the results of recent health department inspections. Consumers have responded by avoiding establishments deemed less sanitary, and restaurants have reduced unsanitary conditions, though one study found that the policy has not decreased cases of reported Salmonellosis (80).

Food Access and Food Security

To improve nutrition and reduce diet-related diseases, cities have attempted to increase access to healthy food and reduce food insecurity using several strategies: (a) supporting urban agriculture; (b) incentivizing supermarket growth; (c) constraining fast-food establishments; and (d) helping small grocers and convenience stores sell healthier food.

Urban agriculture. Urban agriculture has been promoted as a strategy to increase access to healthy, fresh produce, especially in low-income communities. Critics note that urban food production is constrained by the lack of space, suggesting that the potential effects on food security and nutrition are negligible (10). Others have measured substantial health cobenefits beyond the calories and nutrients supplied by urban-grown produce (38, 81, 114, 144). These include increased physical activity (67, 154), reduced stress and improved mental health (148), healthier eating habits in youth (37, 45, 123), and overall well-being (156). Some urban agriculture projects provide job training, promote social integration of immigrants, offer alternatives to incarceration, and produce other economic and social cobenefits that contribute to health. Urban agriculture also improves environmental health by providing ecosystem services such as stormwater retention and urban heat island effect mitigation (31, 35). Regulations of pesticide use within city boundaries, prohibitions on the irrigation of crops with untreated wastewater, and rules requiring raised beds and clean soil to prevent toxic contamination of urban crops are designed to make urban farming and the produce grown in cities safer (65).

Cities have promoted urban agriculture by addressing three main obstacles: restrictive zoning that constrains or prohibits farming in cities, insecure or short-term land tenure for urban farmers, and limited space for expansion (41). Some cities have created agricultural land use designations or special agriculture districts to permit farming and ancillary activities such as farm stands in residential or commercial zones (99, 140). To ensure stability, cities have issued renewable licenses for farms on city land and supported community land trusts to maintain farm parcels in perpetuity (69). Cities have also amended zoning and building codes or public health regulations to encourage food production in atypical spaces such as in parking strips, on rooftops, and inside industrial buildings (33, 64, 118). Many cities, from Rosario, Argentina, to Vancouver, Canada, provide tax incentives, direct financial support, and material and technical resources to urban farms (33, 65, 69).

Healthy food retail incentives. Policies causing residential segregation and disinvestment in Black and Latinx communities and public investment in residential sprawl accelerated the movement of supermarkets from cities to the suburbs and contributed to the decline of smaller independent urban grocers (46, 120). By the 1990s, advocates began to draw attention to the dearth of supermarkets as a dietary risk factor (16, 151). By the early 2000s, researchers and activists mapped areas underserved by food retail and found associations with high rates of obesity and diet-related diseases and used these findings to advance policies to attract new supermarkets to those neighborhoods (137).

Policy makers, particularly in the United States and the United Kingdom, deemed the lack of grocers a market failure to be solved by financial and zoning incentives to attract food retailers to neighborhoods that they may have otherwise considered unprofitable (131). A 2014 survey of 2000 US cities found that one-third of cities provided incentives to open new supermarkets (84). The US Department of Agriculture (USDA) Healthy Food Financing Initiative was a major source of financial support for such incentives in the United States, but states also created financing programs (75); in addition, cities such as New Orleans and New York City offered municipal financial and zoning incentives for supermarket expansion and construction (25, 131). The city of

Baltimore amended its general plan to include the goal that all residents should live no more than 1.5 miles from a high-quality grocery store and, through zoning changes, was able to attract new grocers to the city (136). Even smaller cities have adopted zoning measures to help site grocery stores in their jurisdictions: Santa Rosa, California, changed its zoning requirements to allow grocery stores to locate in any commercial district without a conditional use permit, a typical barrier for supermarkets (50).

Despite the popularity of new supermarkets, however, research indicates weak or inconsistent relationships between supermarket access and increased consumption of healthy food or indicators of a healthy diet such as body mass (1, 42, 47, 57, 58, 129). Progress in this area has been limited because new supermarkets do not substantially change shopping patterns, and supermarkets, which sell both healthy and unhealthy items, do not significantly change the proportion of healthy food purchased (44, 47, 48, 58, 106). Researchers have also critiqued supermarket incentives for focusing on one food retail type and overlooking ethnic grocers, mobile vendors, farmers markets, and other alternatives to supermarkets, which offer healthy, affordable, culturally appropriate food (93, 94, 96, 125). Some cities have responded by enacting policies to encourage alternative forms of food retail. For example, New York City authorized 1,000 new permits for Green Carts, a class of mobile produce vendors required to locate in areas of the city with low levels of fruit and vegetable consumption (89).

Limiting access to fast food. Correlations between levels of obesity and the prevalence of fast-food restaurants led some cities to use zoning to limit the number and concentration of these establishments. For example, Los Angeles restricted the opening or expansion of a stand-alone fast-food restaurant in several predominantly Black and Latinx communities in South Los Angeles by preventing new drive-through windows, new stand-alone restaurants, or the expansion of fast-food restaurant floor space, although studies have found the policy to be ineffective at changing diets and levels of obesity in the targeted neighborhoods (146). In the United Kingdom, many local government plans establish zones near schools, parks, and leisure facilities that exclude takeaway (i.e., fast food) businesses, while other plans limit the overall density of these outlets (76).

Corner store healthy food initiatives. Corner stores, bodegas, and convenience stores are ubiquitous, and their business models typically depend on the sales of soda, beer, snacks, and highly processed shelf-stable food. Cities have implemented programs to encourage and help the owners of corner stores to sell fruits and vegetables and other healthy items (109). For example, Philadelphia's Healthy Corner Store Initiative and New York City's Shop Healthy NYC program provide technical and financial assistance to enable owners to sell fresh fruits and vegetables (51, 109). Efforts made by the Healthy Corner Stores network, a coalition of organizations to enable small stores to sell healthier food, have improved access to fruits and vegetables at the neighborhood level among network members (134). Using a different tactic, Minneapolis required all grocers to stock 10 categories of healthy items to ensure universal access to healthy foods regardless of the presence of a supermarket (98).

These corner store initiatives have produced mixed results. Some have had low compliance: Only 10% of small food stores in Minneapolis complied with the city's stocking requirements (24, 85). Projects in Los Angeles Latinx neighborhoods did not increase the consumption of fruits and vegetables (113), but a similar initiative in East Hartford, Connecticut, had measurable positive effects on food purchases (97). The Baltimore Healthy Eating Zones project, which included interventions at corner stores, produced modest reductions in overweight and obesity among already overweight low-income African American youth (139).

Changing Consumer Food Environments

Cities have attempted to increase the healthfulness of consumer food environments using various policy tools: (a) informational regulations, (b) ingredient bans, (c) marketing restrictions, (d) taxes and incentives, (e) improved public food, and (f) increased enrollment in food benefit programs.

Informational regulations. Cities have enacted informational regulations such as menu labeling requirements to allow consumers to make more informed food choices and, by influencing consumer demand, to encourage businesses to reformulate their less healthy menu items. For example, in 2006, New York City required chain restaurants to label the calories of each menu item. The city law was superseded in 2010 by the federal Affordable Care Act and implemented nationally in 2018, but the evidence on its effects on consumer behavior and meal reformulation has been mixed (18, 90, 149). Over the past two decades, some 38 laws, 11 at the municipal level, were proposed to require sodium labeling in restaurants, although studies have shown mixed effects of this informational regulation on consumer or restaurant behaviors (5).

Ingredient restrictions. Preventing the use of harmful substances in food is typically a function of national food safety agencies, but some cities have regulated unhealthy ingredients in food sold within their jurisdictions. For example, New York City banned *trans* fats in prepared foods, a policy that studies suggest has reduced cardiovascular disease (19, 128). Cities have also implemented policies to restrict sodium, including requiring the provision of foods with reduced sodium content in workplaces; vending machines in public facilities; institutional meal services; and grocery, corner, and convenience stores (142). Some states have attempted to bar such regulations by preempting their adoption by local governments (119).

Marketing limits. Food companies market fast food, ultraprocessed food for home consumption, and sugar-sweetened beverages, often targeting their advertisements to Black and Latinx consumers (2, 39, 63, 73, 95). Some cities have responded by restricting the marketing and advertising of unhealthy foods. For example, in 2018, Amsterdam banned advertisements for unhealthy foods at all city-owned locations, at all city events, and in sporting event sponsorships where more than 25% of the attendees are children (36, 117). In 2019, London banned the advertising of food and nonalcoholic beverages high in fat, salt, and sugar within public transportation.

Some cities have targeted the promotion of unhealthy food to children. For example, San Francisco enacted a so-called “happy meal” ban, a law that prohibits restaurants from offering toys or other incentives with a children’s meal that does not meet nutritional guidelines established by the city. Studies have shown that providing toys with healthier meals and limiting toys with less healthy meals increased healthy meal selection (40). To reduce soda consumption by children, New York City, like other US cities, enacted a local law in 2019 that requires restaurants to offer water, milk, 100% fruit juice, or flavored water without added sweeteners as the default option in children’s meals, though the law does not prohibit restaurants from selling less healthy beverages on request. A recent experiment testing the policy’s effect on purchasing behavior found no statistically significant difference in total calories from beverages (133), though the population impacts have not been assessed.

Sugar-sweetened beverage taxes. Eight US cities have enacted excise taxes on sugar-sweetened beverages to reduce consumption. Within one year of such a tax in Berkeley, California, sugar-sweetened beverage consumption declined significantly in low-income neighborhoods, with a 10% drop in supermarket purchases citywide (88). The Berkeley tax was followed by similar taxes in nearby cities of Albany, Oakland, and San Francisco, and then by Seattle, Boulder, and

Philadelphia. The taxes range from 1 to 2 cents per ounce and generally exclude milk products and 100% fruit juice (6). An alternative approach that the District of Columbia and 23 states have taken is to exempt groceries from sales taxes while excluding sugar-sweetened beverages from the definition of a grocery item (6).

Price incentives for healthy foods. US federal funding has allowed cities to offer financial incentives to enable low-income households to purchase more fruits and vegetables. These incentives differ by amounts, redemption methods, and the types of retailers that participate. Some are coupons that supplement the value of Supplemental Nutrition Assistance Program (SNAP) benefits spent at farmers markets (141), while others are produce discount “prescriptions” disbursed by health care providers. Studies have shown that these financial incentives increase purchases of fruits and vegetables and that recipients report improvements in diets, food security, and perceived health (116). Randomized trials and natural experiments have also indicated that incentives can increase household fruit and vegetable consumption, especially among SNAP participants, yet there is insufficient evidence that they also reduce unhealthy food consumption (106, 116).

Healthful public food. Cities have developed nutrition standards for foods served or sold in city buildings or workplaces. Although they vary by city, most standards require serving fruits and vegetables, low-calorie beverages, baked goods with whole grains, low-fat dairy products, and drinking water (112). Other cities have made healthy food available to vulnerable populations by providing financial support to emergency food providers such as food pantries and soup kitchens. The Brazilian city of Belo Horizonte went a step further by establishing four public restaurants serving more than 10,000 meals per day at subsidized prices and licensing retailers to sell low-cost fruits and vegetables at city-owned sites (3).

Cities have focused on school food environments because of the scale and reach of school food programs and the fact that children may consume nearly half of their daily calories at school (153). Efforts to improve school food have been found to increase enrollment, attendance, cognition, and educational achievement and to prevent malnourishment by offering nutritionally balanced meals that low-income households may be unable to afford (21). Research has found that the money that households save on breakfasts and lunches provided by schools increased food security in the households of participating children (9).

In the United States, the 2010 Healthy, Hunger-Free Kids Act required the USDA to update school meal standards to include more fruits, vegetables, and whole grains and contain less sugar and fat, and it tailored portion sizes and calories by grade level (153). One study of this policy found that it significantly decreased the risk of obesity among children in poverty and that, by 2018, obesity prevalence among children in poverty would have been 47% higher without the policy (78). In addition to implementing policies to make school meals healthier, urban school districts have limited the sale of competitive foods, those items sold in vending machines or by school organizations in addition to the food served in school breakfast and lunch programs. Competitive foods, often sugar-sweetened beverages and ultraprocessed snacks, discourage students from eating the nutritionally balanced school meals. Studies have shown that implementing nutrition standards to limit competitive foods improves metabolic risk factors, though the impacts on total calorie consumption are unclear (43, 101).

School food programs account for more than \$100 billion in spending worldwide, purchasing power that some cities have used to improve the nutritional quality of the food they buy. To make it easier to procure healthier foods, school districts have joined together through organizations such as School Food Focus (Food Options for Children in Urban Schools) in the United States and Food for Life Partnership in the United Kingdom to use their combined procurement power

to source higher-quality ingredients in school meals and to invest food cost savings in food and service improvements (86). The UK partnership has also aimed to provide seasonal, local, organic food and to develop cooking and food cultivation skills (130).

To expand the number of students eating school food, the US Community Eligibility Provision (CEP) allows local school districts to offer free lunches to all students without collecting individual data to determine eligibility for free meals, reimbursing districts on the basis of the percentage of students categorically eligible due to their participation in other means-tested food assistance programs, such as SNAP. The policy reduces paperwork, freeing administrators to focus on menu planning, and eliminating paid meals reduces the stigma experienced by students who would otherwise have to qualify to receive free lunch. More than 33,000 US schools, from primarily high-poverty districts, have adopted the CEP, representing more than 15.5 million children (54, 147). Most studies examining universal free school meals have found positive associations with diet quality, food security, and academic performance (27, 68).

Expanded participation in food benefit programs. SNAP, the largest antihunger program in the United States, significantly decreases hunger, food insecurity, and poverty, thereby improving health (77, 110). While the program is national and implemented by states, cities are often responsible for program administration and enrollment at the municipal scale. Cities have an economic and public health incentive to maximize the number of eligible people who enroll in the program and receive benefits because each SNAP dollar has a multiplier effect of approximately 1.5 to the local economy (23). City policies have targeted outreach to increase enrollment among populations less likely to enroll in SNAP, such as older adults and immigrant households with undocumented family members, and have used technologies such as mobile apps to ease enrollment and recertification procedures (30).

FUTURE DIRECTIONS FOR URBAN FOOD POLICY

Despite attempting many different policies to create healthful urban food systems, cities still have not substantially moved the needle on problems such as food insecurity, obesity, diet-related diseases, and racial and ethnic disparities in cardiovascular disease outcomes. In New York City, for example, dozens of policies and interventions implemented in the past two decades to address diet-related health disparities, nutritional well-being, and food equity have shown limited impact (55). But as planners and policy makers assess the effectiveness of previously implemented policies and review the available evidence, cities face several challenges, discussed below, that require new approaches to making urban food systems healthful.

Food-Informed Planning

Urban planners have used zoning incentives to attract supermarkets to low-income neighborhoods, but cities rezone land for a much wider set of goals, often paying little attention to the effects on food access and food security. By defining the form, size, and uses of commercial parcels, zoning can privilege certain types of food retailers, such as big-box wholesale clubs, over others, such as conventional supermarkets, food cooperatives, or small grocers. By increasing allowable development, rezoning can increase land values, making it more challenging for food retailers to find affordable commercial space (29). Rezoning has altered food retail in high-income countries and can cause particularly significant changes in low- and moderate-income countries with traditional markets and distribution systems based on direct-to-consumer sales and independent distributors. Thus, cities need to ensure that all planning and development activities, including

land use policies that are not explicitly food related, consider the effects on food access and food security, and where these effects diminish food access, find ways to mitigate the impact (14).

A related problem that cities need to address is the potential for well-intentioned policies to improve food environments to unintentionally lead to food gentrification, in which improvements to food retail disadvantage existing populations by reducing affordability and access. Gentrification is the process by which public and private capital is invested in low-income neighborhoods, attracting more affluent residents, whose presence prompts increases in real estate prices, displacement, and changes to the neighborhood's character that make neighborhoods unaffordable, unfamiliar, or unwelcoming to long-standing residents (28). Neighborhood investments can benefit residents by supporting new businesses, infrastructure improvements, and enhanced public services. However, these new resources can also displace existing residents, and those able to remain in place may be faced with a very different social, cultural, economic, and physical landscape, causing psychosocial distress, particularly when such changes disrupt social networks (7). An unstable food environment caused by gentrification can reduce longtime residents' access to healthy, culturally appropriate food (53). New food retailers in a neighborhood may lead to "food mirages" if the new businesses are economically or culturally inaccessible to existing residents (20, 28, 71).

Cities can take several steps to prevent food gentrification: ensuring long-term tenure for affordable food retailers through rent controls and subsidized retail sites; supporting zoning that promotes retail diversity that includes small food businesses; engaging community development corporations and developers in allocating space for community food needs, such as groceries and urban farms; and supporting retail food cooperatives and nonprofit supermarkets that provide affordable food (28).

Adapting to Online Food Distribution

The focus of urban food policies on supermarkets, healthy corner stores, and other brick-and-mortar components of the food system risks being outdated as the food sector rapidly shifts to hybrid and online distribution systems. Virtually none of the literature on food access has accounted for the effects of online grocery shopping because, until recently, it has been a negligible part of the market and was considered out of reach of low-income consumers. The coronavirus disease 2019 (COVID-19) pandemic accelerated adoption of online grocery shopping, as consumers relied increasingly on online grocers to avoid trips to supermarkets, and is likely to continue to grow as consumers worldwide become accustomed to shopping online and as retailers invest in e-commerce distribution systems (34).

In the United States, in response to the pandemic, federal policy accelerated online shopping by low-income consumers who participate in SNAP. Until 2019, the USDA had no system in place to allow SNAP benefits to be redeemed by online grocers. The USDA launched a pilot program in 2019 to enable participating online retailers to offer SNAP redemption, and in response to COVID-19, the agency expanded the pilot to 48 states and the District of Columbia, covering nearly all SNAP participants. Online ordering and home delivery create new opportunities for cities to provide increased access to groceries for neighborhoods that have few brick-and-mortar supermarkets and to provide additional home delivery options for mobility-impaired households (132). However, it is not clear whether the increased access will lead to healthier diets because the existing research is limited. Two studies showed that the time lag between ordering and delivery reduces impulse purchases (70, 102). Yet other studies show that consumers tend to buy shelf-stable foods online, so online purchases may contain a higher proportion of ultraprocessed foods compared to purchases made in the store. Other potential impacts include reduced physical activity and social interaction unless similar activities substitute for the time saved shopping online. Cities

will need to support research to understand the likely health impacts and develop policies and programs to ensure that online shopping has healthy outcomes.

Addressing Social Determinants of Food Inequity

Poverty, racial and ethnic discrimination, and structural oppression based on race, ethnicity, gender, citizenship status, and class are root causes of health disparities and diet-related diseases, yet urban food policy making has often ignored these social determinants. Actions to address root causes of food-related problems such as poverty or residential segregation are often addressed by distinct bureaucracies, such as economic development and housing agencies, that are neither coordinated nor charged with linking their policies to food access, food insecurity, and nutrition (32, 66).

In recent years, cities have begun to expand the scope of food policy to include the social determinants of food insecurity and malnourishment, recognizing that changing the physical food environment or providing incentives for healthy food purchases will result in only marginal changes to diets and health if large segments of the population are impoverished, spatially segregated, exploited at work, and unable to access basic services such as health care, housing, education, and transportation (32). This equity turn in food planning has expanded policy priorities to include issues regarding labor in the food industry, a large sector of the urban workforce that faces health disparities owing to low wages, few benefits, and increasingly precarious jobs. Cities have adopted policies setting higher minimum wages for fast-food workers, providing protections against wage theft among tipped workers, requiring employers to provide paid sick leave, protecting shift workers, and maintaining the jobs of food sector workers when the businesses they work for are sold (32). The equity turn has also meant that urban issues not previously considered relevant to food and nutrition, such as affordable housing, wages, working conditions, or access to health care, are increasingly included in food policy discussions.

Influencing Global Food Systems

Over the past few decades, cities have enacted policies to make urban food systems more environmentally sustainable. Much of this effort has focused on reducing waste in the food system, which has led to municipal bans on various forms of plastic food packaging, straws, or foam food containers (74). Other initiatives focus on reducing food waste and creating a circular economy by reusing food scraps as compost, fertilizer, or biofuel. These have included policies to facilitate food donations, such as by limiting the liability of donors who give away excess food; strengthen urban–rural food distribution chains through support for farmers markets; expand public infrastructure to collect food waste for conversion into animal feed, fertilizer, or biofuels; support food distributors and retailers who sell misshapen produce that would otherwise be discarded or food close to sell-by dates that would be wasted; and provide incentives to food companies to encourage donations of excess food (49).

To address larger environmental problems caused by the food system, including agriculture's contribution to climate change, soil depletion, water consumption, and pesticide and synthetic fertilizer use, cities will need to extend the reach of urban food policy beyond their municipal borders. One way is for cities to use their political power to advocate for national policies to address food system sustainability and resilience. Another approach is to leverage collective purchasing power to buy food that meets social and environmental goals and, in so doing, to try to shift industry practices. Several US cities, beginning with Los Angeles in 2012, adopted food procurement standards developed by the nongovernmental organization Center for Good Food Purchasing, which support five values: local economies; environmental sustainability; a

valued workforce; animal welfare; and health and nutrition (91). Adopting a good food purchasing policy enabled the Los Angeles (California) school district to increase the purchase of locally grown produce from 9% to more than 50%, to switch to antibiotic-free chicken, and to reduce meat purchasing by 15%. The policy also prompted the city of Oakland (California) school district to shift some food purchases from meat to plant-based proteins (62).

CONCLUSIONS

Throughout history, the global food system has experienced periods of overproduction, poor harvests, distribution breakdowns, and other disruptions, sometimes fomenting social unrest and political change. The COVID-19 pandemic is only the latest crisis to affect both global and local food systems. The COVID-19 pandemic, which dramatically increased food insecurity among Black and Latinx populations, further showed how precarious and unequal the food system remains despite the last several decades of food policy making.

Like previous food crises that have created opportunities for social change (79), the disruptions caused by the pandemic can also create openings for systemic change. The pandemic's disruption of normal behaviors, from business closures to social distancing, altered expectations of how dramatically society can change and the types of policy interventions that governments and businesses can impose. Disruptions resulting from the pandemic facilitate questioning of existing structures, technologies, power relationships, and norms, enabling advocates to propose more desirable alternatives. Crises can increase engagement by those most affected, creating opportunities for new governance arrangements through increased public participation. Problems open windows of opportunity for innovative and experimental initiatives that are advanced by policy entrepreneurs. Upended routines in the wake of major disasters can also accelerate institutional learning, innovation adoption, and political action.

Cities are often the locus of crisis-induced policy innovation because they can respond more nimbly than state or federal governments. Cities are also where social movements coalesce and advocates engage in struggles for community power and control of public space, in consumer-based activism, and in civic engagement, often leading to novel policies and programs (32). They are places in which activists practice temporary, tactical, or guerilla urbanism, implementing short-term fixes, sometimes circumventing ordinances or regulations, that may become permanent. Although urban food policy remains a lower priority than municipal functions such as public safety, education, or economic development (124), this article illustrates that cities have proactively managed the food system from a perspective that aims to address the kinds of social, environmental, and economic concerns that have been within the purview of city government. As a result of the COVID-19 pandemic, as large numbers of people lost employment and income and faced food insecurity, food has become an even more politically salient urban issue. A key challenge for food system planners and advocates in the wake of the pandemic is to rethink the priorities and policy approaches, and the scale of initiatives, that city officials have collectively embraced over the past several decades.

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