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A scoping review of the impact of Food Policy Groups on local food systems in high-income countries

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Abstract

This scoping review aimed to explore international evidence on the impact of Food Policy Groups (FPGs) on local food systems, in urban and rural regions of high-income countries. Peer-reviewed and grey literature were searched to identify thirty-one documents published between 2002 and 2022 providing evidence on the impact of FPGs. Activities spanned domains including increasing food equity (e.g. strengthening school meals programmes); increasing knowledge and/or demand for healthy food (e.g. food literacy programmes with children and adults); increasing food access (e.g. enhancing local food procurement); environmental sustainability (e.g. promoting low-waste food items on café menus); economic development (e.g. ensuring local businesses are not outperformed by large food distributors); and increasing food system resiliency (e.g. establishment of local produce schemes). Most FPGs reported conducting activities that positively influenced multiple food system domains and reported activities in urban areas, and to a lesser extent in rural areas. Our study highlighted a range of qualitative and quantitative evaluation strategies used to measure FPGs' impact on local food systems. Our recommendations focus on regular and systematic evaluation and research surrounding the impact of FPG activities, to build the evidence base of their impact. Ideally, evaluation would utilise comprehensive and established tools. We recommend exploring the establishment of FPGs across more regions of high-income countries, particularly rural areas, and forming partnerships between FPGs, local government and universities to maximise implementation and evaluation of activities.

Keywords: Rural: Food security: Food policy: Food systems

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Introduction

Food systems incorporate a myriad of actors and activities spanning food production, processing, distribution, consumption and waste. These activities are interlinked with the social, economic and environmental contexts in which they are situated⁽¹⁾. Food systems are within urban and rural or remote contexts, the latter encompassing areas beyond metropolitan or major cities⁽²⁾. Current food systems in high-income countries are fraught with issues including a lack of resiliency, resulting in fluctuations in food availability and price issues, issues which are exacerbated during crises⁽³⁾, challenges associated with climate change, such as natural resource degradation⁽⁴⁾, and inequitable food access, whereby a greater density of energy-dense, nutrient-poor foods exists in lower socio-economic areas⁽⁵⁾.

When challenges with food access and supply occur in high-income countries, there is often a reliance on providing short-term, suboptimal food relief that often fails to meet nutritional needs and individual agency⁽⁶⁾. In addition, limited access to comprehensive nutrition knowledge and cooking skills programmes can prevent optimal food utilisation in populations at high risk of food insecurity in high-income countries^(7,8).

Effective solutions to food system issues across urban and rural areas of high-income countries includes prioritising local or regional food systems to increase food system resiliency^(3,9). While there is no commonly agreed definition of locally grown or regionally grown food, often the terms relate to food grown close to consumer residences, or grown within the country of consumption⁽¹⁰⁾. Other solutions proposed include increasing equitable access to nutritious food through alternative food relief

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models^(11,12); supporting increased economic development of regional communities through increased job opportunities or local food sales; environmental sustainability activities including reducing food industry or hospitality sector food waste; and increasing access to healthy food through successful policy advocacy (e.g. retail zoning)^(13–15).

Food Policy Groups (FPGs) have emerged as an effective mechanism to facilitate these food system solutions. FPGs refer to the diverse range of cross sector organisations also known as food policy councils, coalitions, collaboratives, networks, partnerships, boards or steering committees⁽¹⁶⁾. FPGs have proliferated across high-income countries including Europe, the USA, Canada, the UK, New Zealand and Australia, engaging multi-sectorial stakeholders from government, agriculture (i.e. food producers), social services, economic development, public health, hunger relief organisations and advocacy groups in identifying issues and facilitating effective solutions across the food system⁽¹⁷⁾. FPGs can operate at varying levels including municipal/local government, provincial/state, rural or First Nations levels⁽¹⁶⁾. Depending on regional needs, FPGs are involved in a diverse range of activities including advocacy to influence local or state policy, such as preserving agricultural land^(17,18); network or partnership facilitation; local food procurement to build local or regional food systems; or direct program delivery, such as cooking, gardening skills or school meals⁽¹⁸⁾. Research shows that school meal programmes can provide both educational and health benefits to children and can influence food security at the household level⁽¹⁹⁾. In addition, a nutritionally balanced lunch may significantly contribute to the diets of children and young people⁽²⁰⁾. School lunch programmes also have the potential to be extended to incorporate food literacy education, and have resulted in improved attendance, educational engagement and behaviour^(21,22). Evidence has shown that increasing food literacy is linked to better dietary practices^(7,72). Among adolescents, increased preparation of meals has been related to healthier diets⁽⁷³⁾, while among adults, food literacy has been related to intention to prepare healthy meals⁽⁷⁴⁾. However, evidence from within some high-income countries suggests that food literacy education is not widely prioritised by schools^(75,76). A survey of teachers found that one quarter (27%) disagreed that food and nutrition education was prioritised in their schools, and almost half (43%) disagreed that their school adopted a ‘whole of school’ approach to food and nutrition education^(75,77). FPGs have also implemented activities that increased awareness of local food poverty, resource dissemination to emergency relief or local service providers. However, these activities are less likely to positively influence the food security of a region in the longer term⁽²³⁾. The COVID-19 pandemic required FPGs to ‘step up’ and respond to local food needs within their communities, extending current activities or creating new ones, for example, utilising their substantial partner network to redistribute food destined for waste to new markets, delivering targeted food boxes to priority populations, and advocating that food sources such as farmers’ markets be deemed essential business during mandated lockdowns⁽²⁴⁾.

While there are ample FPG annual reports and websites documenting the plethora of food system activities undertaken

by FPGs, there is currently no synthesis of these activities or an appraisal of the impact of these activities across high-income countries. Evaluation within each country would provide useful place-based application, though some countries have a dearth of evidence regarding successful FPG activities. Therefore, the cross-country synthesis would provide a wide range of activity exemplars that could potentially be transferrable to other locations, for example, policy advocacy or community/citizen activities⁽²⁵⁾. The lack of evaluation evidence limits our understanding of the effectiveness of these groups on local food system issues, such as through policy, systems and environmental change, including an understanding of the impacts in urban and rural communities^(15,18). Therefore, this scoping review aimed to synthesize the literature describing the impact of FPGs, for improving food system action, in urban and rural regions of high-income countries. To provide a comprehensive overview of the available evidence, the question guiding this scoping review was ‘What evidence is available on the impact of FPGs on local food systems, in urban and rural regions of high-income countries?’

Methods

Protocol and registration

The protocol for this scoping review is registered with Open Science Framework register (<https://osf.io/zj7a6>). The protocol for this review was determined a priori to beginning the review, including the research question, inclusion and exclusion criteria, data sources and search strategy, and the process for selection of the evidence, data-charting and synthesis. The structure and reporting of this review was guided by the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist⁽²⁶⁾.

Search strategy for identifying studies

A database search for peer-reviewed literature was conducted in Scopus, Medline, Proquest and Cumulative Index of Nursing and Allied Health Literature (CINAHL) databases using the following search terms: ‘local food partnership’ OR ‘food policy council’ OR ‘food policy coalition’ OR ‘food policy alliance’ OR ‘food system coalitions’ AND ‘impact OR outcome’ OR ‘policy output’ OR ‘evaluation’. All results were exported into an EndNote database⁽²⁷⁾. A three-step grey literature search was also conducted. Firstly, a Google Scholar search using the search terms was undertaken, with the first fifty pages of results scanned for relevancy. Secondly, the resource Johns Hopkins ‘Annotated Bibliography on Existing, Emerging, and Needed Research on Food Policy Groups’⁽²⁸⁾ was reviewed, with individual references retrieved. Thirdly, individual FPG websites from Europe, Canada, the USA, New Zealand and Australia were reviewed^(29–31), and reports referring to impact or evaluation were identified^(17,32–34). Potentially relevant grey literature was identified by the title or synopsis/abstract including the terms ‘local food partnership’ OR ‘food policy council OR food policy coalition OR food policy alliance OR food system coalition’ AND ‘impact OR outcome OR policy output OR evaluation’.

References were then collated in an Endnote library with peer-reviewed literature, then imported into Covidence software for screening⁽³⁵⁾.

Screening and selection of included studies

For the purposes of this scoping review, FPGs were defined as collective groups of stakeholders who worked collaboratively to create food system reform through policies and programmes, with a focus on health, economic, environmental and social outcomes⁽²⁸⁾. Documents were included in this scoping review if they were published between 2002 and 2022, to align with the proliferation of FPGs in the past two decades⁽¹⁵⁾. Documents from FPGs in Europe, the USA, Canada, the UK, New Zealand and Australia were considered for inclusion, based on documents published in English, and that they are defined high-income Organisation for Economic Co-operation and Development (OECD) countries⁽³⁶⁾. Further, documents were included if they were online reports, journal articles, theses or book chapters. Documents were excluded if they were conference proceedings; magazine articles or opinion pieces; published before 2002; published in a language other than English, or if the FPGs operated in low- or middle-income countries.

Documents were initially screened for relevance by title, executive summaries, or table of contents by two authors (J.D. and S.G.) with conflicts resolved by a third reviewer (K.K.). Documents were included if they discussed the impact and/or evaluation of activities by an FPG (or synonyms). Limited documents demonstrating evaluation evidence were initially found, therefore the search strategy was broadened and repeated to include documents that listed activities and/or programmes that contributed to impact on food systems. Full-text documents were reviewed by two authors (J.D. and S.G.), and full-text screening conflicts were resolved in a consensus meeting with the project manager (S.L.G.) and a third reviewer (K.K.).

Charting the data from peer-reviewed publications and policy documentation

Data were charted into pre-defined tables in a Microsoft Excel⁽³⁷⁾. Charted data included the document title; author(s); year; country; geographical scope; urban/rural as defined by the authors; aims/purpose; study type; FPG; programme name; intervention; key findings; methods. FPGs activities were then itemised according to six impact domains identified by Calancie *et al.* (2018) in the Healthy Food Policy Project Food System Crosswalk^(18,38). The impact domains were as follows: (1) increased access to healthy food; (2) increased knowledge of and/or demand for healthy food; (3) increased food system equity; (4) support increased economic development; (5) support/promote increased environmental sustainability; (6) support food system resiliency.

Results

Study selection

As summarised by the PRISMA flow diagram in Fig. 1, the searches yielded 355 documents, of which 324 remained after the removal of duplicates. After the removal of 177 documents in screening the title and abstract, the full texts of 147 articles were reviewed. The main reasons for exclusion at the full-text stage included that the documents did not provide evidence of any evaluation of activities ($n = 78$). For example, they described activities undertaken by their FPG but provided no evidence of the resulting impact of such activities. A resulting thirty-one documents were included^(11,12,14,16,34,40–62). As two documents reported on the same evaluated activities by one FPG, these documents were combined for the synthesis.

Summary characteristics of the included documents and their evaluation activities

An overview of the characteristics of included documents is provided in Table 1. Included documents reported on evaluated activities by FPGs located in the USA ($n = 16$)^(11,34,41–43,48,50,51,53,54,56,57,59,61–63), the UK and England ($n = 10$)^(12–14,45–47,49,52,58,60), both the USA and Canada ($n = 3$)^(16,40,44), and Australia ($n = 1$)⁽⁵⁵⁾.

Activities were predominantly conducted in urban-only regions ($n = 18$)^(11,12,34,42,43,46,47,49,50,52,54,56–58,60–63), and a smaller number in both urban and rural regions ($n = 10$)^(13,14,16,40,41,44,45,48,53,55). Only one document reported on activities conducted in a rural only region ($n = 1$)⁽⁵⁹⁾.

Most documents reported on evaluated activities of a single FPG (Table 1), and five documents reported on the activities of several FPGs^(13,14,16,44,45). The evaluation methods utilised within the documents were varied, and often multiple methods of evaluation were reported including quantitative and qualitative processes (Table 1). Methods of evaluation were not explicitly described in thirteen documents^(12,47,49,50,52–56,60,61,63). Most documents reported on the results of surveys and interviews with consumers, programme participants or FPG members (Table 1). A minority of documents reported desk-based evaluation activities of impact including audits of activities and meetings, and data on implementation of programmes (Table 1).

Most documents reported a range of outcomes across the impact domains previously identified. A third of documents ($n = 11$) reported on only one domain^(40,42,44,47,50,53,54,57,60–62), five reported on two domains^(43,49,52,56,63), seven documents reported on three domains^(11,12,16,17,41,48,55), five documents reported on four domains^(13,34,45,46,51), and only one document reported five⁽⁵⁸⁾ and six domains, respectively⁽¹⁴⁾. A summary of evidence for each impact domain is provided below.

Food system equity

Evaluated initiatives that impacted food system equity were considered in most documents ($n = 23$, 74%)^(11,12,14,16,34,40–46,48,51–53,55–59,61,63). These documents outlined activities

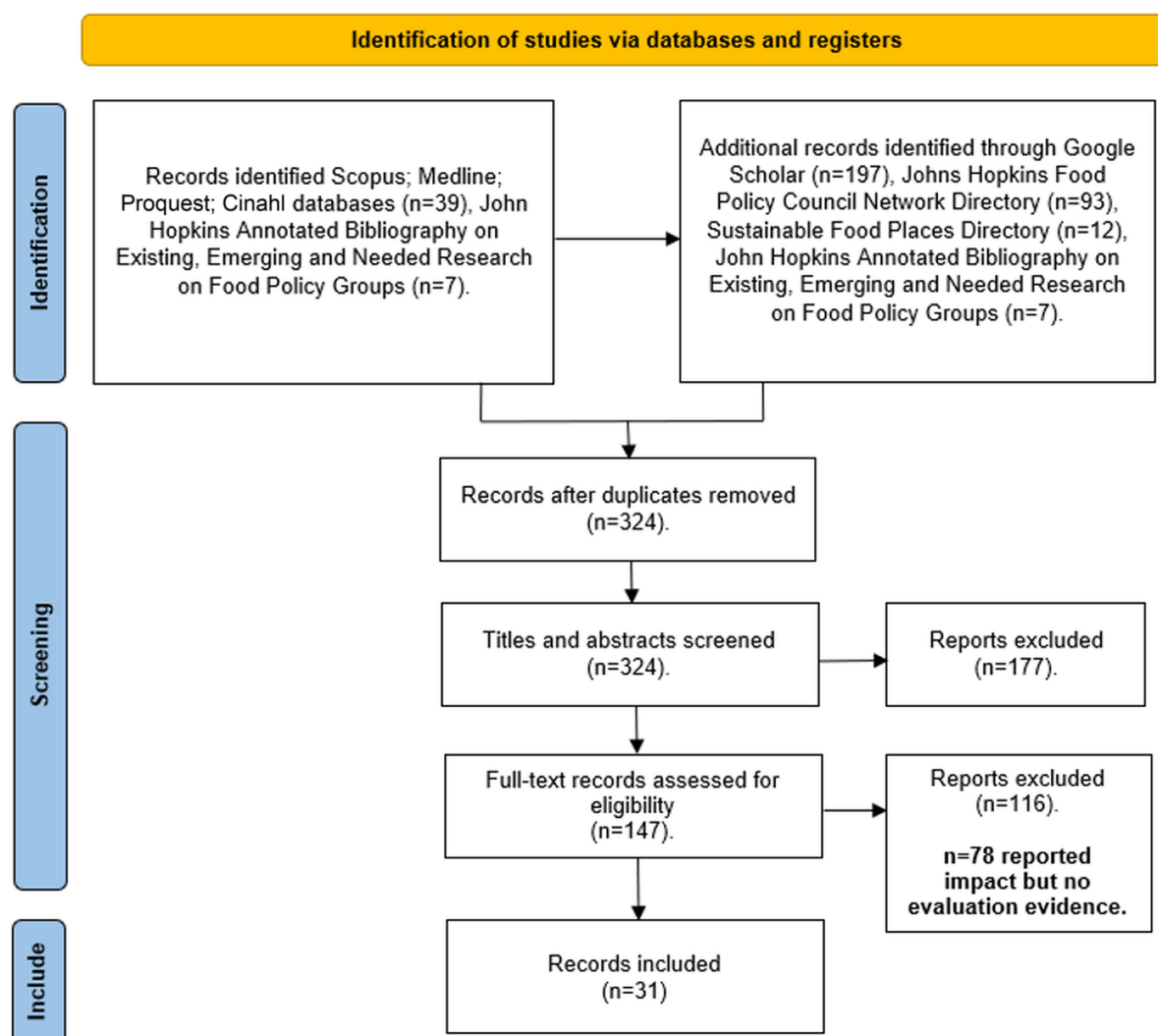


Fig. 1. PRISMA flowchart of literature search and selection of inclusion process⁽³⁹⁾.

conducted across both urban ($n=12$), urban and rural areas collectively ($n=10$), and rural-only areas ($n=1$).

Seven documents reported on initiatives that established, extended or improved school meals programmes or that provided emergency food relief through schools to children and their families^(16,34,46,48,53,56,61) (Table 2). For example, the Nevada FPG advocated successfully for a funded mandate requiring schools with a high rate of students eligible for free or reduced-price meals to be provided within school time⁽¹⁶⁾. Sometimes, local food procurement was increased within existing school meals programmes^(11,50), for example, Los Angeles Unified School District doubled the amount of its food budget spent on food through local producers. Ten documents reported on enhancing access to and quality of existing emergency food relief programmes or establishing new ways to link food relief with at-risk groups^(12,14,40,44–46,55,57,58). Some documents reported on activities that increased donations of fruit and vegetables and other locally grown food to food hubs and emergency food relief providers^(40,44,46,55,57,58). For example, one document reported the establishment of a youth-led network that grew and donated fresh food to food relief

organisations⁽⁵⁵⁾. In another document, a community meal project delivered emergency food parcels as part of the COVID-19 response, with 60% of beneficiaries reporting eating more vegetables⁽⁵⁸⁾.

In three documents, initiatives to increase equitable access to healthy food through farmers markets was discussed^(41,42,59). For example, one document reported an increase in diversity of customers attending a farmers' market, and strategies to increase food vouchers (such as the Supplemental Nutrition Assistance Program) through farmers markets^(41,42,59). Lastly, two documents reported initiatives that increased access to food for people experiencing food insecurity through education programmes that increased the use of food vouchers^(43,52).

Knowledge of and/or demand for healthy food

Sixteen documents reported evaluated initiatives that impacted knowledge of and/or demand for healthy food ($n=16$)^(12–14,34,41,43,45–49,52,55,58,60,63) (Table 3). These documents outlined activities conducted across both urban and rural areas

Table 1. Summary of characteristics of included FPG documents

Author and year	Country; Rurality	Food Policy Group	Evaluation method	Local food system impact sub-theme addressed					
				Access to healthy food	Knowledge of and/or demand for healthy food	Food system equity	Economic development	Environmental sustainability	Food system resiliency
Hills and Jones (2019)	UK; urban/ rural	Several	FPG document analysis; stakeholder interviews	x	x			x	x
King (2017)	England; urban/rural	Several	Stakeholder interviews	x	x	x	x		
Jones <i>et al.</i> (2022)	UK; urban/ rural	Several	FPG document analysis; member and stakeholder interviews and focus group	x	x	x	x	x	x
Taylor (2021)	England; urban	Brighton and Hove Food Partnership	Document analysis; evaluation survey; interviews with stakeholders	x	x	x	x	x	
Brighton and Hove Food Partnership (2018)	England; urban	Brighton and Hove Food Partnership	Consumer survey; food poverty questionnaire	x	x	x		x	
Brighton and Hove Food Partnership (2021)	England; urban	Brighton and Hove Food Partnership	Program participant feedback; method not disclosed.		x	x		x	
Bassarab <i>et al.</i> (2018)	USA and Canada; urban/rural	Several	Member survey	x		x		x	
Martin (2011)	USA; urban/ rural	Adams County Food Policy Council	Programme participant interviews and surveys	x	x	x			
Calancie <i>et al.</i> (2017)	USA; rural	Adams County Food Policy Council	Member interviews	x		x	x		
Fox (2010)	USA and Canada; urban/rural	Toronto Food Policy Council	Field research; member interviews			x			
Montgomery County Food Policy Council <i>et al.</i> (2021)	USA; urban	Montgomery County Food Policy Council	Stakeholder feedback; method not disclosed	x		x			
Montgomery County Food Policy Council (2021)	USA; urban	Montgomery County Food Policy Council	Stakeholder feedback; method not disclosed		x	x			
Capital Area Food Network (2018)	USA; urban/ rural	Capital Area Food Network	FPG document analysis		x	x		x	
Hamel, <i>et al.</i> (2015)	USA; urban	Hartford Advisory Commission on Food Policy	Member interviews; stakeholder surveys	x	x	x		x	
Celovsky (2017)	USA and Canada; urban/rural	Several	FPG member survey			x			
Lo and Delwiche (2016)	USA; urban	Los Angeles Food Policy Council	Document analysis; FPG member observations			x	x		x
Augustine (2019)	USA; urban/ rural	Los Angeles Food Policy Council	Document analysis	x		x	x		x
Massachusetts Food System Collaborative (2022)	USA; urban	Massachusetts Food System Collaborative	Programme participant and stakeholder interviews and survey			x			
Rothman and Baughman (2015)	USA; urban	Worcester Advisory Food Policy Council	Programme participant surveys and focus groups		x	x			

Table 1. (Continued)

Author and year	Country; Rurality	Food Policy Group	Evaluation method	Local food system impact sub-theme addressed					
				Access to healthy food	Knowledge of and/or demand for healthy food	Food system equity	Economic development	Environmental sustainability	Food system resiliency
Schless-Meier (2014)	USA; urban	Pittsburgh Food Policy Council	Programme participant survey and focus group; data analysis			x			
Cambridge Sustainable Food (2017)	England; urban	Cambridge Sustainable Food	Programme participant feedback; methods not disclosed		x				
Cambridge Sustainable Food (2018)	England; urban	Cambridge Sustainable Food	Programme participant feedback; methods not disclosed		x				
Cambridge Sustainable Food (2019)	England; urban	Cambridge Sustainable Food	Programme participant feedback; methods not disclosed		x			x	
Cambridge Sustainable Food (2020)	England; urban	Cambridge Sustainable Food	Programme participant feedback; methods not disclosed		x	x			
City of Hartford Advisory Commission on Food Policy (2013)	USA; urban	City of Hartford Advisory Commission on Food Policy	Methods not disclosed			x			
Greater Cincinnati Regional Food Policy Council (2021)	USA; urban	Greater Cincinnati Regional Food Policy Council	Methods not disclosed						x
Lehigh Valley Food Policy Council (2020)	USA: urban/rural	Lehigh Valley Food Policy Council	Methods not disclosed			x			
Los Angeles Food Policy Council (2020)	USA: urban	Los Angeles Food Policy Council	Programme participant feedback; methods not disclosed	x					
San Diego Food System Alliance (2019)	USA; urban	San Diego Food System Alliance	Programme participant feedback; methods not disclosed					x	
Sustain The Australian Food Network (2021)	Australia; urban/rural	Sustain The Australian Food Network	Programme participant feedback; methods not disclosed		x	x			x

Table 2. Summary of FPGs evidence relating to food system equity

Author and year	Evaluation method	Outcomes	Summary of findings
King (2017)	Telephone interviews with public health professionals	Improving access to and quality of food in emergency food relief and aged care	FPGs were addressing food system issues by: <ul style="list-style-type: none"> • Fostering a sustainable approach to manage emergency food aid. • Implementing a holiday hunger programme. • Improving food quality in care homes.
Jones <i>et al.</i> (2022)	Analysis of grant reports and award applications; interviews, focus groups and written communications with local food coordinators and stakeholders	Expansion of emergency food relief services; local food procurement; established social supermarkets; reduced food waste	<ul style="list-style-type: none"> • Middlesbrough Food Partnership (MFP): free logistics and warehouse space, increased capacity to expand existing programmes. • Brighton and Hove Food Partnership (BHFP) expanded emergency food relief services and established food processing hub: in 1 week 40 projects provided food to 3001 households (4831 people; 3966 meals), up from 420 parcels per week pre-COVID. • BHFP coordinated collective action to organise fresh, personalised and culturally appropriate foods. • Carlisle local food partnership brought together affordable food hubs, food banks and meals on wheels. • Cambridge Sustainable Food created COVID-secure community food hubs. • Established virtual eco shops (social supermarkets) offering customers 10 food items for suggested 2 pounds, in 13 schools in areas of high deprivation: in one year 141 tonnes of surplus food was redirected to people in need. • Newcastle scaled up 'Recipe Kit' (meal box) initiative from 15 to 50 kits per week. • Food Plymouth created additional food aid redistribution centre. • Calderdale local food partnership drew upon Sugar Smart campaign network to obtain assurances on nutritional guidelines for holiday food provision. Children provided free school meals.
Taylor (2021)	Project evaluation forms; interviews with project leads and Brighton Food Factory (BFF); review of Affordable Food Network (AFN) meeting minutes	<ul style="list-style-type: none"> ↑ intake of vegetables, improved quality and affordability of fresh food ↑ social connectedness 	<p>£120 000 worth of fresh local produce was distributed to local community groups via Brighton Food Factory (BFF) in 1 year. Outcomes included:</p> <ul style="list-style-type: none"> • 60% of beneficiaries reported eating more vegetables. • Participants dependency on food banks decreased. • 94% participants found more convenient. • 88% found healthier food and more choice. • 80% strongly agreed food was excellent value for money. • ↑ access for marginalised groups (e.g. those with disabilities or dietary needs and ethnic minorities). • ↑ social connectedness: 74% of participants felt more connected to other people; 53% felt happier; 39% made new friends; and 31% felt less lonely. • Improved dignity in accessing lower cost food: 100% of those that had attended a foodbank in the past found the Affordable Food Project (AFP) a nicer experience. • Improved financial situation: 74% of people feel they can eat better within their budget. • Emergency food parcels delivered as part of COVID-19 response.

Table 2. (Continued)

Author and year	Evaluation method	Outcomes	Summary of findings
Brighton and Hove Food Partnership (2018)	Brighton & Hove Food Partnership (BHFP) annual survey of food bank users; BHCC (Brighton & Hove City Council) annual 'City tracker' questionnaire; BHFP & Sussex University joint event to track impact of food strategy	Financial counselling for people experiencing food poverty; ↑ wages; ↑ school meal provisions; ↑ awareness of community meals by sharing resources; nutrition education booklet and food bags for discharged hospital patients; 'Pay as you feel' lunch provisions; ↑ fresh produce donations to food relief organisations.	<ul style="list-style-type: none"> • Moneyworks delivered financial counselling on food budgeting to people experiencing food poverty. • Brighton and Hove Living Wage Campaign encouraged large employers to increase wages: 370 employers pledged to their staff 8.75 pound more per hour and 3064 salaries increased (based on true cost of living in UK). • Possibility People employment projects increased employment among people at risk of food poverty. • ↑ availability and use of school meal provisions for infants and children. • Promotion and expansion of Chomp Holiday lunch clubs: partnership with Blatchington Primary School = 341 meals served in 2017; 700 meals served in total. • Supported alternative access to community meals by sharing resources (lunch club list, transport pamphlet and casserole club leaflet) when Meals on Wheels contract ceased. • Received funding from Moneyworks and Red Cross for pilot programme to supply discharged patients with food bags (on-going funding not secured). • Development of the 'Eating Well As You Age' booklet to support discharged hospital patients and throughout the city: 7000 copies issued. • Secured provisions to offer 'pay as you feel' meal, (lunch only) 5 days a week. • Secured more fresh and healthy food for emergency food providers by encouraging healthy food donations and redistribution of surplus food (Fairshare).
Brighton and Hove Food Partnership (2021)	Data from participants of nutrition initiatives. Method not disclosed	Expansion of food relief services through COVID-19 food processing hub and local food procurement	<ul style="list-style-type: none"> • Launched 7 Affordable Food Initiative Programs to support food access for low-income residents. • COVID-19 food relief processing hub provided food to 50 projects/ 3000 emergency food relief parcels per week during lockdown. • Food relief program provided 20 000 meals (through recipe kits) to low-income families. • Local food procurement work with network of caterers provided over 2.5 million meals a month.
Bassarab <i>et al.</i> (2018)	Survey completed by members of 278 food policy groups across the USA and Canada	Mandated universal school meals (Breakfast after the Bell)	Due to recommendation of Governor's Council on Food Security – Nevada food policy group, Nevada passed bill for funded mandate requiring schools with a high rate of students eligible for free or reduced-price meals to serve breakfast after the bell.
Martin (2011)	Surveys and interviews with programme participants; surveys issues to participating vendors at the farmers market at the end of programme	Improved diversity among Farmer's Market customers	Farmers' market vendors reported increased diversity in customer base (i.e. more Hispanic people)
Calancie <i>et al.</i> (2017)	Phone interviews with 8 active Adams County Food Policy Council members	↑ access to fresh produce for low-income residents	Reduced barriers to using SNAP benefits at farmers' markets: Adams County Food Policy Council advocated for the Farmers' Market Association to accept Electronic Benefit Transfers (EBT) from the Supplemental Nutrition Assistance Program (SNAP) resulting in change in the farmers' markets' organizational policy.

Table 2. (Continued)

Author and year	Evaluation method	Outcomes	Summary of findings
Fox (2010)	Field research and qualitative analysis of data from interviews with six Toronto Food Policy Council Members	Fresh produce boxes delivered	Toronto Food Policy Council partnered with FoodShare to launch Good Food Box programme: distributed 4000 boxes of fresh affordable produce through 200 neighbourhood drop-off points in low-income neighbourhoods of Toronto monthly.
Montgomery County Food Policy Council <i>et al.</i> (2021)	Qualitative data from grantees. Method not disclosed	Expansion of emergency food relief services; distribution of culturally appropriate food supplies	<ul style="list-style-type: none"> • Creation of Weekend Bag programme for school meal recipients: 6900 individuals served May–September 2020. • Expansion of existing services and organisations to support food access among seniors and hard-to-reach communities, e.g. targeted meal delivery in postcodes with large number of COVID-19 cases. • Distribution of culturally appropriate food supplies.
The Montgomery County Food Policy Council (2021)	Data from grantees. Method not disclosed	Expansion of emergency food relief services and fresh produce storage capacity	<p>Grant funds enabled emergency food aid organisations to:</p> <ul style="list-style-type: none"> • Procure larger quantities of food from wholesalers, food banks and undertake direct delivery. • Expand storage facilities and capacity to store/distribute fresh foods. • Expand existing services.
Capital Area Food Network (2018)	Qualitative data from community organisations received through the Wake County Food Access Portal; Tracking system (documents) used to measure Food Security Plan progress	↑ knowledge of food insecurity among seniors; expansion of food relief services in schools	<ul style="list-style-type: none"> • Launch of Seniors Voices pilot project that aimed to highlight food insecurity among Wake County seniors of colour. • ↑ number of Wake County Public School System (WCPSS) food pantries from 7 to 21. • Expanded School Breakfast Programs at 30 elementary schools to include Breakfast in the Classroom (BIC) programme.
Hamel <i>et al.</i> (2015)	Analysis of commission's records; stakeholder and community surveys; Interviews with past and present Commissioners	↑ use of food relief services in schools	<ul style="list-style-type: none"> • Established 'Golden Muffin Award' to recognise schools with student participation in the School Breakfast Program. • Monitored and promoted School Meals program through schools and CT Summer Meals Location Finder to increase participation.
Celovsky (2017)	Analysis food policy council documents from the directories aggregated at Johns Hopkins Centre for a Liveable Future	↑ local food procurement	<ul style="list-style-type: none"> • The Cleveland-Cuyahoga County Food Policy Council partnered with local government to achieve a local purchasing ordinance adopted by the City of Cleveland. • Vermont Food to Plate Network, partnered with four food hubs to increase local food purchasing 58% in 1 year.
Lo and Delwiche (2016)	Reflective Essay based on the authors' experience and observations in developing and implementing the Good Food Purchasing Policy; review of secondary data	↑ local food procurement	<p>Los Angeles Unified School District (LAUSD) board adopted Good Food Purchasing Policy, developed by the Los Angeles Food Policy Council. LAUSD's participation in the GFPP led to:</p> <ul style="list-style-type: none"> • Redirection of ~US\$10 million towards local food purchasing, in 2 years. • Doubled food budget for local foods. • ↓ meat purchases by nearly 15%. • A commitment to sourcing 100% antibiotic-free chicken.
Augustine (2019)	Review of secondary data	↑ local food procurement	<p>Los Angeles Area School District redirected at least US\$12 million in healthy produce purchases to local businesses.</p>

Table 2. (Continued)

Author and year	Evaluation method	Outcomes	Summary of findings
Massachusetts Food System Collaborative (2022)	Interviews with programme participants and stakeholders	Local food procurement	Massachusetts Healthy Incentives Program (HIP) Pilot led to establishment of USDA's Food Insecurity Nutrition Incentive programme (FINI), providing grants to foster similar incentives programmes nationwide. More than 200 farmers participate in HIP; >US\$34 million in fruits and vegetables purchased from local farmers (since April 2022).
Rothman and Baughman (2015)	Pre- and post-test participants assessment to measure change in food security status, nutrition and personal economics-related knowledge, attitude and behaviour; participant focus group	↑ access to food among food insecure people	Food insecurity ↓ post-intervention (27% to 9%), likely due to increased use of food stamps and personal economics education.
Schless-Meier (2014)	Programme participant surveys and focus groups; vendor satisfaction surveys; an end-of-season vendor meeting; rapid market assessments	↑ access to and consumption of fruits and vegetables among low-income residents	Programme participants reported: <ul style="list-style-type: none"> • Quality and selection of fruits and vegetables at farmers' markets ↑. • Fresh Access and farmers' markets enabled them to purchase fresh fruits and vegetables. • The price of produce at farmers' markets was better than retail stores. • 80% of Electronic Benefit Transfers (EBT) users and 59% of credit/debit users reported eating more fruits and vegetables since commencing the programme.
Cambridge Sustainable Food (2020)	Qualitative data from programme participants	↑ access to fruit and vegetables	Promotion of 'Healthy Start' vouchers through facilitation of cookery activities ↑ uptake of vouchers by 5% and 3.5% in two regions representing 8100 more fruit and vegetables purchased by low-income families.
City of Hartford Advisory Commission on Food Policy (2013)	Programme evaluation. Methods not disclosed	↑ access to food among food-insecure children/adolescents	42% ↑ in number of meals served through Hartford Public Schools in summer of 2012 (55 000 more meals served).
Lehigh Valley Food Policy Council (2020)	Programme evaluation. Methods not disclosed	Expansion of meals programme for food-insecure children/adolescents	Partnership with Department of Education Food and Nutrition Service allowed food policy groups to: <ul style="list-style-type: none"> • Expand Summer Meals Program (meals service ↑ from approximately 168 509 in 2015 to 411 900 in 2020). • Deliver training to community organisations to facilitate Summer Food Service programme. • Assist with analysis of communities to identify underserved areas. • Host recruitment forums for new site and sponsors to ↑ capacity to deliver programme.
Sustain the Australian Food Network (2021)	Qualitative data from program participants	Urban agriculture; local produce donation to food relief organisations	Established the Cardinia Youth Food Security Network: 120 m ² of garden beds set up in 5 high schools. Youth led network grew and donated 115 crates (10–15 kg/m ²) of fresh food to food relief organisations.

↑ Increased; ↓ decreased.

Table 3. Summary of FPG evidence relating to increased knowledge and/or demand for healthy food

Author and year	Evaluation method	Outcomes	Summary of findings
Hills and Jones (2019)	Analysis of food policy group reports, activity logs, communication analytics, funding applications and financial data; in-depth stakeholder interviews	↑ food literacy among school children	Food Cardiff developed School Holiday Enrichment Programme (Food and Fun) model, supported national roll out.
King (2017)	Telephone interviews with public health professionals	↑ awareness about food poverty; promotion of local food	FPGs address food system issues through: <ul style="list-style-type: none"> • Educating and raising awareness of complexity of food poverty. • Smart Sugar campaign. • 'Taste Adventures': children issued stamps for trying new foods and received education from local producers on the benefits of local foods. • Local Food Partnerships coordinated/shared information and resources between Emergency Relief organisations and community. • Expanded Good Food Oxford (GFO)'s Food Services Database and map nation-wide: interactive online map provides details on 100 food banks, community larders and community fridges. • Food Cardiff ran Veg Cities campaign and worked with Edible Cardiff to support small farmers, allotments and community in response to lockdown: 14 000 plants, seeds and growing kits distributed as part of city-wide campaign. • Good Food Cardiff Autumn Festival (month long programme): 25 partners held 45 free food activities focused on inspiring people to grow, cook and share food throughout city including distribution of 5000 vegetable plants. • Birmingham LFP established The Growing Network: aim to ensure everyone has access to skills and knowledge required to grow food. • Brighton and Hove Food Partnership increased emergency food parcel distribution from 420 parcels per week pre-COVID, to 1400 parcels per week, during COVID. • ↑ consumer knowledge about where to purchase local food and benefits of local foods. • COVID-19 safety training delivered. • 74% of survey respondents felt they can eat better within their budget, 56% have tried new foods, 27% consume fewer unhealthy snacks/drinks. • ↑ knowledge and access to relevant local services (45% of project users said they learned about other services/activities). • Developed resources for people experiencing food poverty, including food bank map and 'Eating well on a budget' leaflets. • Developed lunch club category for the 'It's Local Actually' Directory created by Possibility People including lunch club lists, community transport and casserole club pamphlets.
Jones <i>et al.</i> (2022)	Analysis of grant reports and award applications; interviews, focus groups and written communications with local food coordinators and stakeholders	Coordination and resource dissemination for emergency food relief organisations; food services database/map expanded country-wide; plants, seeds and growing kits distributed through nutrition information campaign; free food activities held.	
Taylor (2021)	Project evaluation forms; interviews with project leads and Brighton Food Factory (BFF); review of Affordable Food Network (AFN) meeting minutes	↑ food skills and literacy; improved knowledge and access to relevant local services.	

Table 3. (Continued)

Author and year	Evaluation method	Outcomes	Summary of findings
Brighton and Hove Food Partnership (2018)	Brighton & Hove Food Partnership (BHFP) annual survey of food bank users; BHCC (Brighton & Hove City Council) annual 'City tracker' questionnaire; BHFP & Sussex University joint event to track impact of food strategy	Education resources for elderly and people experiencing food poverty; food poverty awareness training for housing workers; education campaign; Healthy Choice schemes; food and nutrition training for paid care workers.	<ul style="list-style-type: none"> Delivered food poverty awareness training to housing workers including use of food poverty questions developed by BHFP. Contributed to design of national Food Power programme. Developed campaign to increase uptake of Healthy Start vouchers and vitamins including increasing knowledge amongst health professionals. Launching the Healthy Choice Award initiative to improve quality of School breakfast clubs. Delivered food and nutrition training to paid care workers and staff in care homes through BHCC (Brighton & Hove City Council) training programme. Coordinated food hygiene/safety for shared meal settings. Secured funding for purpose-built training kitchen. Developed nutrition tip sheets for elderly and offered grants to support training programmes in shared meal settings. Recruited 103 food outlets to participate in the Healthy Choice (HC) scheme aimed at increasing healthy food menu options for local food businesses.
Brighton and Hove Food Partnership (2021)	Data from participants of nutrition initiatives. Method not disclosed.	↑ food literacy	78% participants of a 'cooking on a budget' course reported cooking one recipe at home following completion of the programme.
Martin (2011)	Programme participant surveys and interviews; farmers market vendor surveys	↑ food literacy among adults	<ul style="list-style-type: none"> One participant learned new way to cook green vegetables and ↑ produce use from farmers' market. Information tools shared at Fair Share events ↑ a participant's knowledge on protein intake and vitamin requirement for Vitamin D-deficient daughter.
Montgomery County Food Policy Council (2021)	Data from grantees. Method not disclosed	↑ awareness of food relief services	Technology upgrades allowed for ↑ promotion of food relief services to wider audience: Rainbow Community Development Center served 8002 households, a 275% ↑ over initial projections.
Capital Area Food Network (2018)	Qualitative data from community organisations received through the Wake County Food Access Portal; Tracking system (documents) used to measure Food Security Plan progress	Developed training guide; ↑ access to nutrition resources and knowledge of food relief service; implementation of Food Security Plan	<ul style="list-style-type: none"> Facilitated development of Breakfast in the Classroom (BIC) guide used to train school staff. Developed Wake County Food Access Portal page as a central hub for organisations and community to access food related resources including food pantry list, information about farmers markets, nutrition education etc. Developed and launched website listing of Wake Country food pantries. Coordinated the Food Security Plan implementation and communication within community.
Hamel <i>et al.</i> (2015)	Analysis of commission's records; stakeholder and community surveys; interviews with past and present commissioners	↑ awareness of local food outlets/gardens	Developed map of Hartford local food resources to help residents and community organisations to locate grocery stores, local urban farms, farmers markets and community gardens.
Rothman and Baughman (2015)	Pre- and post-test participants assessment to measure change in food security status, nutrition and personal economics-related knowledge, attitudes and behaviour; two participant focus groups	↑ food literacy among adults	<ul style="list-style-type: none"> ↑ cooking skills and knowledge of healthy foods following nutrition education sessions. ↑ participants reporting 'they ate enough vegetables for their health' (45% to 72%).

Table 3. (Continued)

Author and year	Evaluation method	Outcomes	Summary of findings
Cambridge Sustainable Food (2017)	Qualitative data from programme participants	↑ food literacy among adults and children	Developed syllabus for 6-week food literacy course for adults and children of low-income neighbourhoods; participants reported ↑ cooking skills, ability to prepare low-cost meals and creativity of meals, post programme.
Cambridge Sustainable Food (2018)	Qualitative data from programme participants	↑ knowledge of sustainable eating practices; reduced food waste	World War II Rationing Challenge educated community members on sustainable eating practices, reducing food waste, cooking from scratch, increase consumption of local seasonal food; participants reported increased use of leftovers/reduced food waste.
Cambridge Sustainable Food (2019)	Qualitative data from programme participants	↑ food literacy among adults and children	Participants reported ↑ cooking skills post-programme.
Cambridge Sustainable Food (2020)	Qualitative data from programme participants	↑ food literacy among adults and children	Participants of the Thyme to Cook food literacy sessions reported ↑ cooking skills and tried new foods.
Sustain the Australian Food Network (2021)	Qualitative data from programme participants	↑ food system literacy among adolescents	Cardinia Youth Food Security Network: increased students food system literacy by embedding education programme in school curriculum.

↑ Increased.

collectively ($n = 8$), urban ($n = 7$) and rural-only areas ($n = 1$). Activities included strategies to improve knowledge of and/or demand of healthy food and mainly focused on increasing food literacy in adults^(12,41,43,46), both adults and children combined^(47,49,52,60) and in school children/adolescents^(13,55). Increased awareness of local food poverty^(45,46), resource dissemination through emergency relief or relevant local services^(14,56,58), increased knowledge of sustainable eating practices and reducing food waste⁽⁴⁷⁾ were also discussed. For example, interviewees in King's (2017) evaluation of FPGs⁽⁴⁵⁾ discussed educating and raising awareness of the complexity of food poverty through a Smart Sugar campaign, 'Taste Adventures' (where children were issued stamps for trying new food) as well as local producer involvement in the education of children. In the evaluation of the Brighton & Hove Food Partnership (BHFP), Taylor (2021) reported increased consumer knowledge about where to purchase local food and benefits of local foods; 74% of survey respondents felt they could eat better within their budget, 56% had tried new foods, and 27% had consumed fewer unhealthy snacks/drinks⁽⁵⁸⁾. Participants also reported improved knowledge and access to relevant local services (45% of project users said they have learnt about other services/activities)⁽⁵⁸⁾. The Montgomery County Food Policy Council reported that increased promotion of food relief services to a wider audience (for example, the 'Rainbow Community Development Center') led to an increase in utilisation of the service to a total of 8002 households, a 275% increase over their initial projections, following an educational campaign.

Access to healthy food

A third of documents evaluated initiatives that impacted access to healthy food ($n = 12$)^(13,14,16,34,41,45,46,51,54,56,58,59) (Table 4). These documents outlined activities conducted across both urban and rural areas collectively ($n = 6$), urban-only areas ($n = 5$) and rural-only areas ($n = 1$). The documents detailed a variety of methods used by FPGs to increase access to healthy food including: the delivery of fresh food^(13,56), an improvement of system-level issues (e.g. local food procurement, land use and encouraging people to grow their own)^(45,54), making healthier food more affordable to low income families^(41,59), increasing fruit and vegetables served to children⁽⁵¹⁾, and targeted advocacy to improve healthy food access^(13,16,46). One document outlined the implementation of a new bus route to make accessibility to healthy food easier⁽³⁴⁾ and the provision of increased food storage capacity for an 'Affordable Food' programme⁽⁵⁸⁾. Although some of the methods of evaluation were not disclosed in the documents, the majority reported positive action towards improving access to healthy food. For example, King (2017) undertook qualitative interviews to understand how FPGs were addressing food system issues including changing local food procurement (e.g. school meal service), land use, helping people to grow their own food and helping local suppliers to sell healthy local produce⁽⁴⁵⁾. Augustine (2019), through a review of secondary data, found that after 3 years of following the Good Food Purchasing Policy (GFPP), the Los Angeles Area School

Table 4. Summary of FPGs evidence relating to healthy food access

Author and year	Evaluation method	Outcomes	Summary of findings
Hills and Jones (2019)	Analysis of food policy group reports, activity logs, communication analytics, funding applications and financial data; in-depth stakeholder interviews	Successful advocacy activities relating to local food; cross-sectoral partnership; commitment to sustainability.	<ul style="list-style-type: none"> • Successful advocacy for food objectives to be written into Local Outcomes Improvement Plan. • Mayoral support obtained for cross-sectoral strategic food partnership in Greater Manchester, following Sustainable Food Cities (SFC) Network member proposals. • Brighton and Hove Food Partnership secured specific food section in Sustainable Communities Strategy and high-level commitment to support SFC Gold Award Application. • Cambridge Food Partnership supporting Cambridge Food Hub development.
King (2017)	Telephone interviews with public health professionals	Local food procurement; land use planning; healthy food subsidies.	<p>FPGs address food system issues through:</p> <ul style="list-style-type: none"> • Local food procurement (e.g. school meal service). • Land use/planning, helping people to grow own food. • Helping local suppliers to sell local produce. • Smart Buying scheme in colleges and universities. • Costs of healthier options offset using profits from less healthy food to keep price of healthy food low. • Securing funding for food related initiatives.
Jones <i>et al.</i> (2022)	Analysis of grant reports and award applications; interviews, focus groups and written communications with local food coordinators and stakeholders	Fresh produce boxes delivered	Vegaroonitoon delivered fresh fruit and vegetable boxes via sustainable transport (e.g. electric bike). In May 2020, 145 tonnes of food distributed, over 345 000 meals and 8040 emergency parcels prepared.
Taylor (2021)	Project evaluation forms; review of Affordable Food Network (AFN) meeting minutes; interviews with project leads and Brighton Food Factory (BFF)	↑ food storage areas	Affordable Food Network (AFN) ↑ storage area capacity, through the Brighton Food Factory (BFF), to support the Affordable Food Project (AFP): 250 cubic metres ambient and 268 cubic metres.
Brighton and Hove Food Partnership (2018)	Brighton and Hove Food Partnership (BHFP) annual survey of food bank users; BHCC (Brighton and Hove City Council) annual 'City tracker' questionnaire; BHFP and Sussex University joint event to track impact of food strategy	Successful advocacy activities relating to food poverty	Provision for food poverty included in Fairness Commissions 'Poverty Proofing the School Day' audit.
Bassarab <i>et al.</i> (2018)	Survey completed by members of 278 food policy groups across the USA and Canada	Successful advocacy activities relating to food poverty	Jefferson County Food Policy Council (Colorado) worked with the City of Golden to pass ordinance requiring all farmers markets on city property to accept SNAP benefits.
Martin (2011)	Surveys and interviews with programme participants; surveys issued to participating vendors at the farmers market at the end of programme.	↑ access to and consumption of fresh fruit and vegetables for low-income families	<p>Fair Share Program resulted in:</p> <ul style="list-style-type: none"> • ↑ consumption of fruit and vegetables; • ↑ purchasing fresh produce.
Calancie <i>et al.</i> (2017)	Phone interviews with 8 active Adams County Food Policy Council members	↑ access to fresh fruit and vegetables for low-income families	<p>Adams County Food Policy Council's (ACFPC) Healthy Options programme provided vouchers for Adams County Farm Fresh Markets. Outcomes included:</p> <ul style="list-style-type: none"> • successfully reached under-represented groups • changed purchasing habits towards healthy, fresh foods • shifted demographics of farmers' markets clientele.
Montgomery County Food Policy Council <i>et al.</i> (2021)	Qualitative data from grantees. Method not disclosed	Fresh produce boxes delivered	<ul style="list-style-type: none"> • Delivery of produce boxes to individuals and families that were homebound due to COVID-19. • Manna Food Center's Stay Put Pack's programme: 20 400 households served May–Sept 2020.

Table 4. (Continued)

Author and year	Evaluation method	Outcomes	Summary of findings
Hamel <i>et al.</i> (2015)	Analysis of commission's records; stakeholder and community surveys; interviews with past and present commissioners	Creation of new bus route to increase residents access to healthy food outlets	Established the L-Tower Avenue CTTTransit bus route; increased access to supermarkets. Ridership ↑ over 100% from 4978 passengers (Sept 2000) to 10,349 (Aug 2021).
Augustine (2019)	Review of secondary data	↑ amount of fruit and vegetables served to children/adolescents	Los Angeles Area School District ↑ amount of produce purchased and served to students.
Los Angeles Food Policy Council (2020)	Data from programme participants. Method not disclosed	↑ access to and sale of healthy food; increased profit for local business	Healthy Neighbourhood Market Network programme: <ul style="list-style-type: none"> • provides education and technical assistance to support neighbourhood market owners to increase healthy foods options • educates store owners about purchasing, storing and promoting fresh produce • 100% of store owners have cited ↑ in healthy retail sales and average \$1,453.40 profit ↑ per week due to healthy food options.

↑ Increased.

District and its produce distributor increased the overall amount of fresh produce purchased and served to students⁽⁴²⁾. The Los Angeles Food Policy Council's 'Healthy Neighbourhood Market Network program' provided education and technical assistance to support neighbourhood market owners to increase healthy foods options and store owners learned to purchase, store and market fresh produce. The council reported that 100% of store owners had cited an increase in healthy retail sales and an average US\$1453.40 profit increase a week due to including more healthy food options⁽⁵⁴⁾.

Environmental sustainability

Ten documents were included that evaluated initiatives that impacted environmental sustainability outcomes ($n = 10$)^(12–14,16,34,46,48–50,58) (Table 5). These documents outlined activities conducted across urban-only areas ($n = 4$) and both urban and rural areas collectively ($n = 4$), with none in rural-only areas. Reducing food waste was the most common outcome related to environmental sustainability reported by FPGs, discussed in eight documents^(12–14,16,46,49,50,58). Examples of food waste reduction initiatives include promoting low-waste food items on menus of existing food outlets to the establishment of new zero-waste food outlets. Other activities included low-waste promotion and education programmes for consumers and food system stakeholders and the establishment of surplus food programmes which aimed to reduce food waste. Initiatives related to increasing urban agriculture was reported by three documents^(14,34,48). Examples of initiatives included gardening programmes and policies to support food production (gardens, chickens and bee keeping) by residents in urban areas.

Economic development

Evaluated initiatives that impacted economic development were reported in a small number of documents ($n = 6$)^(11,14,45,51,58,59) (Table 6). These documents outlined activities conducted across both urban and rural areas collectively ($n = 3$), as well as urban- ($n = 2$) and rural-only areas ($n = 1$). Economic development-focused initiatives included ensuring local businesses were not outbid by large food distributors, therefore keeping jobs locally^(14,45), for example, school meal programmes providing opportunities for smaller businesses to gain food supply contracts. Others reported activities that maintained income for local food producers and farmers^(11,51,58,59) and truck drivers within the food supply system⁽¹¹⁾. For example, Lo and Delwiche (2016) outlined large economic impacts and local food procurement practices resulting from the adoption of the Good Food Purchasing Policy (GFPP). This led to the redirection of at least US\$10 million for produce purchasing from local growers and creation of at least 200 new, well-paying food chain jobs in Los Angeles County. Jobs were created on farms, in fruit and vegetable processing, and in bread manufacturing and distribution. GFPP also contributed to higher wages and improved working conditions for over 160 truck drivers in local supply chains⁽¹¹⁾. The Adams County Food Policy Council also demonstrated improved economic benefits to local farmers

Table 5. Summary of FPG evidence relating to support environmental sustainability

Author and year	Evaluation method	Outcomes	Summary of findings
Hills and Jones (2019)	Analysis of food policy group reports, activity logs, communication analytics, funding applications and financial data; in-depth stakeholder interviews	↓ food waste	The Cambridge food partnership 'Taste not Waste' programme assists restaurants, catering businesses and food outlets to reduce food waste. Cambridge Cookery (participant) will be first zero food waste café.
Jones <i>et al.</i> (2022)	Analysis of grant reports and award applications; interviews, focus groups and written communications with local food coordinators and stakeholders	↑ urban agriculture; reduced food waste	<ul style="list-style-type: none"> • Food Cardiff expanded community growing groups. • 16 Local Food Partnerships signed up to Sustainable Food Places 'Food for the Planet Campaign'. • 'Plate up for Glasgow' engaged 41 cafés, restaurants and bars to offer at least one low waste 'Food Hero' menu item: 4192 low waste dishes and drinks serves over five-week period and 88% of venues pledged to keep low waste dishes on menu. • Bristol LFP established a Food Waste Action Group.
Taylor (2021)	Project evaluation forms; interviews with project leads and Brighton Food Factory (BFF); review of Affordable Food Network (AFN) meeting minutes	↓ food waste	Brighton Food Factory = 44% of programme participants throw away less and 15% eat less meat.
Brighton and Hove Food Partnership (2018)	Brighton & Hove Food Partnership (BHFP) annual survey of food bank users; BHCC (Brighton & Hove City Council) annual 'City tracker' questionnaire; BHFP & Sussex university joint event to track impact of food strategy	↓ food waste	Secured funding from BHCC (Brighton & Hove City Council) for Surplus Food Network programme to support shared meal settings.
Brighton and Hove Food Partnership (2021)	Data from participants of nutrition initiatives. Method not disclosed	↓ food waste	Flavour project: redistributed surplus food.
Bassarab <i>et al.</i> (2018)	Survey completed by members of 278 food policy groups across the USA and Canada	↓ food waste	City of Madison Food Policy Council supported county resolution declaring 2017 the year of food waste and recovery, hosted food waste and recovery convocation, developed food waste and recovery resource guide.
Capital Area Food Network (2018)	Qualitative data from community organisations received through the Wake County Food Access Portal; tracking system (documents) used to measure Food Security Plan progress	↑ urban agriculture; ↑ knowledge on food waste	<ul style="list-style-type: none"> • Launched 'Granny's Garden Project' pilot aimed to connect seniors and youth through gardening. • Developed series of food waste reductions flyers including information about food donation locations, liabilities and tax incentives.
Hamel <i>et al.</i> (2015)	Analysis of commission's records; stakeholder and community surveys; interviews with past and present commissioners	↑ urban agriculture	Assisted in drafting an urban agriculture ordinance (approved 2015).
Cambridge Sustainable Food (2019)	Qualitative data from programme participants. Method not disclosed	↓ food waste	<ul style="list-style-type: none"> • Waste Less Save More Campaign raised awareness of and positively impacted food waste: participants reported reduction of food waste; ↑ purchases of reduce priced foods at the supermarket. • Taste Not Waste programme supported food waste reduction in hospitality sector: one participant implemented self-serve veg for staff, reducing plate waste by 12%. Estimated food waste savings over one year for all participants was over 20 tonnes.
San Diego Food System Alliance (2019)	Data from program participants. Method not disclosed	↓ food waste	Smart Kitchens San Diego programme: providing technical assistance in source reduction and food recovery for large institutions across the region. 15 participant institutions: 249 783 pounds of food waste prevented, 34% reduction in wasted food.

↑ Increased; ↓ decreased.

Table 6. Summary of FPG evidence relating to support increased economic development

Author and year	Evaluation method	Outcomes	Summary of findings
King (2017)	Telephone interviews with public health professionals	Support local income	<ul style="list-style-type: none"> • Ensure new businesses have food issues (e.g. procurement practices) on radar from the start. • Establishment of school meal providers framework, ensuring smaller suppliers are not outbid by big food producers.
Jones <i>et al.</i> (2022)	Analysis of grant reports and award applications; interviews, focus groups and written communications with local food coordinators and stakeholders	Government financial investment in local initiatives	Middlesbrough Food Partnership (MFP) secured 40 000 pounds COVID recovery funding from local council to distribute among smaller community groups.
Taylor (2021)	Project evaluation forms; interviews with project leads and Brighton Food Factory (BFF); review of Affordable Food Network (AFN) meeting minutes	Support local farmers	<ul style="list-style-type: none"> • Improved business management for producers: Brighton Food Factory (BFF) help farmers with funding applications, paperwork and marketing. • ↑ number of sales outlets (distributors, retailers, direct customers) for small- and medium-scale businesses
Calancie <i>et al.</i> (2017)	Phone interviews with 8 active Adams County Food Policy Council members	↑ income for local farmers	Economic benefits to local farmers through increasing the customer base and sales of local produce at farmers' markets.
Lo and Delwiche (2016)	Reflective Essay based on the authors' experience and observations in developing and implementing the GFPP; review of secondary data	↑ income for local farmers; creation of new jobs in food sector ↑ wages and improved working conditions for truck drivers in food supply chain	Los Angeles Unified School District (LAUSD) ↑ local food procurement practices resulting from the adoption of the Good Food Purchasing Policy (GFPP) (developed by the Los Angeles Food Policy Council). Redirected US\$10 million towards local produce. Created >200 new food chain jobs in LA County. GFPP also contributed to higher wages and improved working conditions for over 160 truck drivers in LAUSD's supply chain.
Augustine (2019)	Review of secondary data	↑ income for local farmers; creation of new jobs in food sector	After three years of following a Good Food Purchasing Policy (GFPP) (developed by the Los Angeles Food Policy Council), the Los Angeles Area School District increased produce purchases from local businesses, generating over 150 new well-paying food chain jobs.

↑ Increased.

through increasing the customer base and sales of local produce at farmers' markets⁽⁵⁹⁾.

Food system resiliency

Six documents included evaluated initiatives that impacted food system resiliency of regions ($n = 6$)^(11,13,14,51,55,62). These documents outlined activities conducted across both urban and rural areas collectively ($n = 4$), and urban-only areas ($n = 2$), none of which included activities in rural only areas. In three documents, FPGs reported their activities resulted in increased support for and sale for local food producers^(51,55,62). This was sometimes linked with increased consumption of healthy foods through the provision of local food boxes⁽⁵⁵⁾. Government funding commitments and local-food focused food strategies, such as food procurement plans, were reported in two documents^(13,14). The development of partnerships, strategies and networks supporting local food producers were reported in two documents^(11,62), sometimes with reported economic benefits for producers and regions (Table 7). For example, Lo and Delwiche (2016) reported on the establishment of a relationship for sustainable wheat farmers in California to become the primary source of grain for baking products for the region's school district. Additionally, a local food campaign in multiple school districts resulted in increased sales of local food to school cafeterias⁽⁶²⁾.

Discussion

This scoping review aimed to synthesise all available evidence of the impact of FPGs for improving food system action, in urban and non-urban regions of high-income countries. Of the thirty-one documents in this review, approximately half reported on evaluated activities by FPGs located in the USA, with a smaller number within the UK and England, Canada and Australia. Evaluation methods utilised within the documents ranged from comprehensive, mixed methods evaluation to surveys and interviews to activity audits. The evidence points to a positive impact of FPGs on multiple food system domains, with most FPGs conducting a range of activities relevant to their regions, mostly in urban areas and to a lesser extent including rural-only regions. This is consistent with the wider literature that there is a lack of food- and nutrition-related research in rural areas around the world^(64,65).

Key activities relating to food system equity undertaken by FPGs included evidence-based initiatives such as extension or improvement of school meal programmes or school-based emergency food relief. Our review shows that FPG activities such as extension or improvement of school meals programmes or emergency food relief⁽⁶⁶⁾ occurred mostly within the USA, and to a lesser extent in the UK, Canada and Australia, and even less in rural areas. Specific activities included trialling alternative food relief models (i.e. in England), extending school lunch programmes, such as through weekend or holiday periods (England, USA), creating holiday lunch clubs, providing alternative food relief through 'pay as you feel' community meals programmes (UK) and food drop-off locations in low-income neighbourhoods (Canada). Given the USA has a

National School Lunch Program (NSLP) which provides low-cost or free lunches in almost 100 000 public and non-profit private schools, it is unsurprising that US documents focused on school-based meals. While the UK provides a Free Meal programme, not all students are eligible due to a low threshold of household income limits. Recent advocacy activities from FPGs have called for the extension of such programmes to become universal⁽⁶⁷⁾. In Baltimore (USA), and in response to COVID-19, schools, recreation centres and mobile sites provided over 10.5 million 'Youth Grab and Go Meals' to children and young people. Initiatives supporting the wider community included a decentralised food network; many small food collection sites were established to support vulnerable community members. Food boxes were home-delivered to older adults and anyone economically, medically or socially impacted by the pandemic⁽⁶⁸⁾.

Our findings relating to FPG efforts to enhance knowledge of and/or demand for healthy food focused on increasing food literacy, among children, young people and adults included activities that align with the broader literature. For example, England's 'Taste Adventures' programme issued stamps to children when they tried new food and local producers were also involved in food system education of children⁽⁴⁵⁾. Consumer education in the UK increased their awareness about where to purchase local food, and the associated benefits of local food⁽⁵⁸⁾. Other FPGs activities influenced healthy food knowledge (i.e. USA, England, Australia), understanding of sustainable eating practices, how to eat on a budget (both England) and where to purchase locally grown food (England, USA) and food waste reduction activities (England). Consumer-focused activities surrounding nutrition and environmental sustainability have been shown to be effective, particularly with respect to food wastage, in high-income countries⁽⁶⁹⁾.

Predominant activities relating to the healthy food access domain included local food procurement and encouragement of home-grown produce, to overcome the predominant barriers to consumption of regionally grown fruit and vegetables⁽⁷⁰⁾. Our review highlighted that FPGs increased access to healthy food through fresh food delivery and local food procurement, via school meal services (England). In addition, FPGs supported the development of a food hub in the UK or conducted targeted advocacy to improve healthy food access, such as advocating for farmers' markets to accept SNAP benefits (USA), and establishment of a new bus route (USA). FPG members successfully advocated for food objectives to be included in a Local Outcomes Improvement Plan and gained endorsement of a cross-sector partnership to drive local food issues⁽¹³⁾ (UK).

Our review highlights that impactful FPG activities for environmental sustainability (i.e. low-food-waste café initiatives in the UK and USA, consumer waste reduction education in the UK and USA), economic development (i.e. support for improved business management in England, creation of food system jobs in the USA) and food system resiliency (i.e. supporting local food systems and the development of food strategies in the UK), were reported on by fewer documents. This could be related to the outcomes of these activities being harder to quantify or link to outcomes of specific FPG actions. Our study highlighted a range of evaluation strategies and tools used across several countries to

Table 7. Summary of FPG evidence relating to support food system resiliency

Author and year	Evaluation method	Outcomes	Summary of findings
Hills and Jones (2019)	Analysis of food policy group reports, activity logs, communication analytics, funding applications and financial data; in-depth stakeholder interviews	Government commitment to improve local food systems through funding and agenda inclusion in local plans; local food procurement	<ul style="list-style-type: none"> Local partnership work secured the aim to make Glasgow a sustainable food city in the council's strategic plan. Bristol partnership members have succeeded in engaging the council's senior leadership team to commit to 'Going for Gold' with SFC and to accompany this with financial and in-kind investment in the food partnership. The Bristol partnership lobbied successfully for the inclusion of food as one of the main strands in the new One City Plan. Growing Middlesbrough initiative is supporting Middlesbrough College to procure more local food and drink. Bristol Food Network's (BFN) conducting exploratory work to pioneer the first catering Dynamic Purchasing System (DPS) which will open up the procurement market to small, local producers.
Jones <i>et al.</i> (2022)	Analysis of grant reports and award applications; interviews, focus groups and written communications with local food coordinators and stakeholders	Developed food action plans; secured funding for initiatives within local food plans	<ul style="list-style-type: none"> 10 of the established Local Food Partnerships published a new food strategy, plan or charter in 2020–2021. Glasgow secured 180 000-pound funding for a food poverty-framed child healthy weight project. Glasgow promoted local produce through the 'Chef's Challenge' initiative. Bristol launched Bristol Bites Back Better (BBBB) campaign educating community about the current food systems, inviting them to a city-wide conversation about building a better system. Provided COVID-19 resilience grants, to support innovative community food responses to the pandemic such as pilot projects and scaling up tested methods to maximise impact. Middlesbrough Food Partnership provided funding from the local Council's COVID-19 Recovery Fund to many small community groups not otherwise eligible for funding.
Lo and Delwiche (2016)	Reflective Essay based on the authors' experience and observations in developing and implementing the Good Food Purchasing Policy (GFPP); review of secondary data	Partnerships with local producers/distributors	Following adoption of the Good Food Purchasing Policy (GFPP) (developed by the Los Angeles Food Policy Council) Los Angeles Unified School Districts (LAUSD's) produce and bread distributor has transformed its internal tracking system of suppliers and now only works with those that meet GFPP standards. This distributor became primary source of grain for baking products for school district and for 115 other school districts.
Augustine (2019)	Review of secondary data	↑ support and sales for local producers	Los Angeles Area School District influences local food purchasing within institutions in Chicago, IL, Austin, TX, the cities of Minneapolis-St. Paul, MN, Cincinnati, OH, Oakland, CA and San Francisco, CA.
Greater Cincinnati Regional Food Policy Council (2021)	Methods not disclosed	↑ support and sales for local producers	<ul style="list-style-type: none"> Launched 'Feed our Future' campaign in four school districts bringing more local food to school cafeterias: \$340 285 in sales of local foods to partner school districts. Allocated funding for farmers markets, vendors and nutrition incentive programmes to collaborate on more streamlined local food access opportunities: partnered to provide FPGs employer-incentivized community supported agriculture (CSA) vouchers to employees. Outcome: more than \$552 563 increase in sales of local food in the region.

Table 7. (Continued)

Author and year	Evaluation method	Outcomes	Summary of findings
Sustain The Australian Food Network (2021)	Qualitative data from program participants. Methods not disclosed	↑ support and sales for local producers; increased consumption of fruit and vegetables	<ul style="list-style-type: none"> Melbourne Food Hub Grow Source Eat project: Sustain worked directly with urban farmers and Victorian growers in distributing weekly produce boxes to Melbourne residents and Cardinia residents through the Cardinia Community Food Hub, supporting producers who lost their usual market (e.g. cafés) during the pandemic: 58% of customers reported eating more fresh fruit and an vegetables and 87% reported they ate more seasonally as a result of their subscription. Sustain joined VicHealth's COVID-19 Food Security and Food Systems Working Group, to plan COVID-19 responses and develop a consensus statement on food system reform in Victoria.

↑ Increased.

measure FPGs' impact on local food systems. Mixed methods evaluation was used among a third of studies, while others used case study or qualitative approaches. A 20-year FPG scoping review asserted that more mixed methods, quantitative and mixed site evaluation is required, to gain a comprehensive understanding of FPGs' impact on food systems⁽¹⁵⁾. The same scoping review also reported few FPG evaluations had been conducted outside of the USA. Our review builds on this evidence by including findings from several other high-income countries. Regular, formal FPG evaluation on local food systems and policy impacts has been recommended by many previous research authors⁽¹⁵⁾. The reasons why many FPGs do not implement existing, comprehensive tools remains to be investigated. Previous research has indicated resourcing and capacity constraints, such as that FPGs are not research or data-driven, as well as a lack of time, and particularly funding, were key challenges facing FPGs⁽¹⁵⁾. For example, some FPGs lack core staff funding, almost three-quarters in the USA operate on an annual budget of US\$10 000 or less, and more than one third of FPGs have no funding⁽⁷¹⁾. This demonstrates the substantial challenges faced by FPGs to progress food system support. Widespread measurement of the impact of FPG activities on local food systems could increase the proliferation of FPGs across all high-income countries⁽¹⁵⁾. This could be especially important in countries like Australia where the concept remains in its infancy⁽⁷²⁾, despite some positive, early successes⁽⁷³⁾.

Based on our review of the evidence supporting the impact of FPGs on local food systems, we make the following recommendations:

- FPGs should utilise tools and frameworks to regularly and systematically evaluate their impact, using such tools as the 'Get it Tooltogether': Food Policy Capacity Assessment Toolkit⁽⁷⁴⁾, Food Policy Council Self-Assessment Tool (FPC-SAT)⁽¹⁷⁾, Food Power Collective Impact Tracker⁽⁷⁵⁾, or Sustainable Food Cities (SFC) Network framework and toolkit⁽⁷⁶⁾. Utilisation of tools like these would facilitate cross-country and setting comparisons and ensure data collected are compelling and credible. Local health researchers, consultants and/or health promotion practitioners may be best to orientate FPGs to these. For example, FPGs could partner with universities, to increase the likelihood that food system impact activities are comprehensively evaluated.
- FPGs should be encouraged in areas where stakeholders have identified an intention to address multiple food system issues collaboratively, with the goal of integrating and aligning their work. Such groups could learn from existing international activities⁽⁷⁷⁾, but prioritising food system activities that are suitable for the local context. For example, place-based stakeholders should determine whether FPGs need to be embedded within local governments as a strategy to initiate or support the development and implementation of activities.
- More research is needed to firstly understand work addressing food system issues in regional areas, such as which groups currently exist, their food system issues of focus, and challenges associated with their activities. Secondly, where formal FPGs do exist, evaluating their



impact on rural food system issues within high-income countries. Given much of the existing evidence relates to FPG activities conducted in urban or across both urban and rural regions, a greater understanding of their potential impact in more rural and remote areas is required to further address inequities in food access that are related to geography.

This study's strengths include a comprehensive systematic scoping process and analysis of both the peer-reviewed and grey literature. The latter ensured all relevant documents were included, given many FPGs tend not to be academically driven and produce their own evaluation documents outside of scientific journals. Previous research has asserted that evaluations were historically viewed by FPGs as a threat to their growth and new FPG establishment, and there is also a dearth of evidence about FPG impacts outside of the USA. The resource and capacity issues faced by FPGs, such as a lack of funding for operations or core staff and thus a large reliance on volunteers, is a substantial reason why more evaluation about their impact has not occurred to date⁽⁷⁸⁾. Given many FPGs lack long-term funding, this could provide further explanation for a lack of longitudinal evaluation⁽¹⁵⁾. The lack of evaluation also prevents many FPGs from accessing 'impact-oriented funding'⁽⁷⁸⁾. Another strength of our work is positioning findings within food system domains indicated by leading FPG academics^(18,38). This could prove useful to FPGs wanting to identify activities to implement at the local level. Limitations include the inclusion of documents only published in English; several documents from countries such as Germany were unable to be reviewed but may possibly have yielded important learnings. In addition, given the diversity in evaluation methods reported in documents, direct comparisons between documents are difficult. Further, the lack of rural and remote FPG evidence limits application of these findings to those areas and warrants further investigation. There is also the potential for positive bias for the reporting of results, given many evaluations involved surveying or interviewing FPG members or facilitators. Publication bias may also be present, given many included documents were grey-literature reports published by FPGs.

Conclusion

This scoping review identified evaluation evidence supporting food system impact activities implemented by international FPGs and showed a lack of evaluated FPG action in rural and non-urban areas. Activities focused predominantly on food system equity, increasing knowledge and/or demand for healthy food, and access to healthy food. FPGs were mostly undertaking activities in line with the scientific evidence. While there is ample evaluation evidence that FPGs are a mechanism to achieve positive food system outcomes, many documents still report impact without accompanying evidence. Therefore, if FPGs utilise existing and comprehensive tools to thoroughly evaluate their work, the reported impact could be more widespread. FPGs show promise for extensive establishment across other regions of high-income countries; however, they should be further scoped in rural areas, where residents can face unique food system challenges.

Authorship

S.L.G. obtained funding; all authors conceptualised the study; J.D. and S.G. extracted the data; all authors contributed to the write-up and editing of the full manuscript.

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Conflict of interest

None.

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