Food pathways to community success

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Abstract

According to the Food and Agriculture Organization *et al.* (2020), approximately 811 million people around the world do not have access to adequate food to live active and healthy lives. This has led to an increase in reliance on food assistance programs, a service available mostly in more economically developed countries. Other compounding cost of living-related factors such as inadequate income, inflation and the subsequent fuel poverty, have led to an increasing reliance on private-sponsored 'food bank' assistance programs that contain less nutritious foods that contribute to a forced unhealthy lifestyle. Community building endeavours such as community kitchens, hubs and social supermarkets also play an important role in addressing food and fuel poverty, including mental health and wellbeing. Using examples of various initiatives from the United Kingdom (UK), this chapter discusses pros and cons of food assistance programs, their impact on people's health and wellbeing, and their role in creating sustainable and resilient local food systems.

Key words: food and fuel poverty, food assistance programs

Introduction

Hunger is defined as "an uncomfortable or painful physical sensation caused by insufficient consumption of dietary energy" (Food and Agriculture Organization *et al.*, 2022, p. 204). It is a term often used to define periods when populations are unable to eat due to lack of money, access to food, fuel and/or other resources. The United Nations list of Sustainable Development Goals (SDGs), defined 'Zero Hunger' as one of its goals with the aim of ending hunger, achieving food security, improved nutrition and promotion of sustainable agriculture (The General Assembly 2015). Although hunger and food insecurity are closely related in terms of impact on public health and wellbeing, they are distinct concepts. While the former refers to a personal physical sensation of discomfort, the latter refers to a lack of *regular* (physical and economic) access to adequate, safe and nutritious food required for normal growth and development that promotes an active and healthy life (FAO, 1996).

A recent survey by The Food Foundation (2022) estimated approximately 4.7 million households in the UK were food insecure. Even though severe food insecurity is at the extreme end of the hunger spectrum, a person experiencing moderate food insecurity may have to prioritise meals and/or sacrifice other basic needs to overcome hunger for a short period of time.

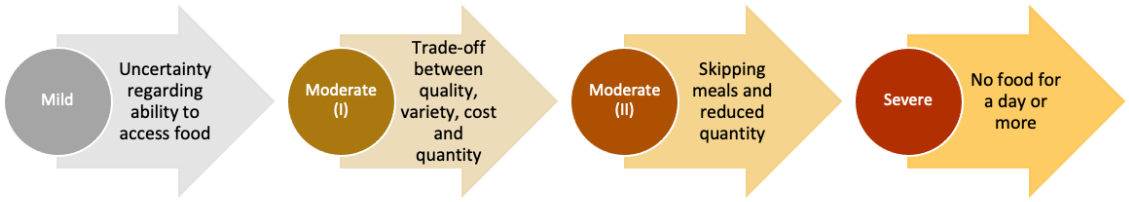

Figure 1: Significant levels of food insecurity

These individuals may only have access to cheap and/or readily available foods that are more energy dense (processed foods high in saturated fats, sugars, and salt) rather than nutrient dense. Consumption of such food groups may provide some daily caloric needs but consumption of essential nutrients is significantly reduced (Lindberg *et al.*, 2015; FAO, 2022). In 2008, the Food and Agriculture Organization identified four dimensions of food security: (1) physical availability of food; (2) economic and physical access to food; (3) food utilization; and (4) food stability (FAO, 2008).

Table 1: Four dimensions of food security

Adapted from Food and Agriculture Organization (2008, p. 1)

Dimension	Description
Food availability	Addresses the *supply chain* aspect of food security. Focus: Degree of production, stock levels (surplus) and net trade.
Food access	Concerned with economic and physical access to food (post creation of adequate food supply at the national and regional levels). Focus: Influence policy emphasis on the following to achieve food security: • Incomes • Expenditure • Markets • Prices
Food utilisation	Utilisation: The way the body makes the most of various nutrients in the food. Nutritional availability provides sufficient energy and is the consequence of good care and feeding practices, food preparation, diet diversity, and intra-household distribution of food. Focus: Nutritional status of individuals
Food stability	People are food insecure if they have inadequate access to food on a periodic basis leading to a risk of deterioration of their nutritional status. Focus: Consistency of availability, access, and utilisation of food.

By 2014, an extensive discussion was initiated by the Committee on World Food Security concerning the impact of over-reliance on globalised supply chains affecting nutrition and food accessibility for people in the lower socioeconomic strata. Further, food access and stability haven't received enough attention despite their link to food security and public health. This is an important topic, especially in geographies with high household essential expenditures. Food and fuel prices have soared due to global inflation caused by the Covid-19 pandemic (Haldane, 2021) and the war in Ukraine (Molina, Montoya-Aguirre and Ortiz-Juarez, 2022). Due to rising utility costs, many families are considering trade-offs between essentials. Fuel poverty - more specifically, sustained economic and physical access to food - are therefore essential for further exploration of the impact of rising fuel prices.

Bradshaw and Hutton coined the term fuel poverty in 1983 to describe the condition of not being able to afford adequate warmth at home. Boardman, (1991, p.219), refined the definition as “the inability of a household to obtain adequate energy services for 10% of its income”. This definition has been further adapted to formulate national policy and identify households that are fuel poor (Moore, 2012). Although there are multiple definitions for fuel poverty, the scope of most definitions is the same: (1) fuel and energy consumption; (2) threshold income; (3) household; (4) spending and expenditure; and (5) warmth. Since fuel

poverty has a wider impact on public health and wellbeing, it has been classified as a “highly complex social problem” (Baker, Mould and Restrick, 2018, p. 610).

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Past research has highlighted the negative impact of fuel poverty on public health outcomes. For example, studies by the London School of Hygiene & Tropical Medicine (2014) and the National Institute for Health and Care Excellence (2015) investigated the impact of inadequately heated homes on winter morbidity in the UK caused by cardiovascular, cerebrovascular, respiratory disorders, especially in vulnerable populations, and mental health disorders leading to worries about debt management, affordability, thermal discomfort, and the impact of the cold and damp on one’s own health. A study by Bhattacharya *et al.* (2003) suggested that cold weather adversely impacts family budgets and nutritional outcomes, especially in poor families – the amount of *extra* money spent on fuel is the exact amount such families decrease spending on food, leading to a decrease in caloric intake during the winter/colder months. Further concerns have been raised about the impact of fuel poverty on child development. During the infancy stage children have higher calorific needs as they go through a period of rapid growth and in order to keep warm and grow normally, children living in cooler homes require an even higher calorie intake (O’Meara, 2016). The trade-off between basic human rights has a lasting impact on quality of life. Such is the impact of fuel poverty on food poverty that in their 2010 paper, Liddell and Morris briefly explored the utility of funds generated through energy savings in retrofitted homes on the ability to access food.

Although fuel poverty has been a highly discussed topic, studies have seldom explored the impact of fuel poverty on food security, specifically food utilisation and stability in the UK. To address this gap, this chapter explores the impact of UK state-sponsored and private-entity sponsored food assistance programs through a fuel poverty lens. Food assistance programs are primarily services in MEDC aiming to alleviate food poverty and reduce hunger.

Globally, these are mostly stopgap measures to alleviate food insecurity. For the purpose of this chapter, the term 'food assistance program' refers to any set up which aims to reduce food poverty, whether private or state-sponsored.

Methodology

Desktop research was used to identify relevant literature on food assistance programmes and to develop an understanding of current policy and social needs in the UK. The following thirteen integrated digital databases covering heterogeneous disciplines were used to collect articles, Doctoral theses, book chapters, white papers, grey literature, and business reports: Web of Science, Food Science Source, British Library Catalogue, Emerald, Ethos, Google Scholar, Research Gate, CAB Abstracts, EBSCO, Academic Complete, Access to Research, Wiley Online and Science Direct. Furthermore, search engines and portals were used to find additional information on the use of food assistance programmes: www.google.com, www.bing.com, www.linkedin.com, www.fareshare.org.uk, www.foodaidnetwork.org.uk, www.feedingbritain.org, and www.trusseltrust.org.

Specific search term combinations with Boolean search operators were entered into online databases to capture primarily available published, catalogued, and relevant documents through a comprehensive and an un-biased search process. All keywords and synonyms searched were based on existing literature in the domains of *food assistance and community feeding programmes* in the UK. Search terms were established as defined in the protocol (James, Randall and Haddaway, 2016).

State-sponsored food assistance programs in the UK

During the Great Depression (1929-1939), people lined up to receive soup, bread, and other handouts. Many governments in more economically developed countries, started state-sponsored food assistance programs to deal with the queues and food insecurity issues. Inspired by the United States *Food Stamp Program* (established in 1939), the UK's *Welfare Food Scheme* was introduced in 1941 (Ministry of Food and Ministry of Health, 1959; Martin *et al.,* 2003). Both schemes supplemented wartime rations for vulnerable populations. The UK scheme evolved from utilising wartime rationing systems to post office tokens that provided a social safety net for low-income individuals (Martin et al., 2003).

The 1934 *Milk in Schools Scheme* provided school children with milk and during the 1940s, and the *Welfare Food Scheme (*WFS) supplemented this scheme. Developed as a rationing tool, dried milk was provided to mothers and children during the post-war period. In 1954, it was labelled a 'benefit in kind' under the *Family Allowance Scheme.* These schemes were initially the responsibility of the Board of Education, then the Ministry of Health, the Ministry of Agriculture, Fisheries, and Food, Ministry of Health, and eventually, the Ministry of Agriculture, Fisheries and Food managed procurement (Ministry of Food and Ministry of Health, 1959). While revisions to eligibility criteria limited eligibility to lower-income families, cod liver oil, concentrated orange juice, and vitamin tablets were added to the list of foods for lower socioeconomic families in 1975 (SEP) (Machell, 2014). In 2006, the WFS was replaced by the *'Healthy Start'* scheme, yet people from higher SEP perceived it as a flawed system believing it was a lifestyle option by lower SEP (Asthana, Helm and Harris, 2010). According to Machell (2014), political factors motivated the reform of WFS.

The Healthy Start Scheme

Launched in 2006, the aim of this scheme was ‘to offer state funded nutritional welfare for families on low incomes across the UK’ (Department of Health, 2002; National Institute for Health and Care Excellence, 2015b). Historically, beneficiaries were provided with vouchers that could be spent on fruits, vegetables, pulses, milk and/or infant formula and coupons for vitamin supplements for women and children (Machell, 2014). The vouchers have now been replaced by pre-paid cards, automatically topped up every four weeks. Beneficiaries include women that are more than 10 weeks pregnant or individuals (parents and carers) that have children under the age of four and on low incomes. Beneficiaries are sent a ‘Healthy Start card’ with money on it which can be used in some shops in the UK (National Institute for Health and Care Excellence, 2015b). The card can be used to purchase: (1) cow’s milk; (2) fresh, frozen and tinned fruits and vegetables; (3) fresh, dried and tinned pulses; and (4) infant formula milk based on cow’s milk (NHS, 2022).

Table 2: Overview of Healthy Start Vouchers, UK - Voucher values

Adapted from NHS (2022)

PRODUCT	TERM	VALUE/WEEK
MILK, FRUITS, VEGETABLES, PULSES	From 10th week of pregnancy	£4.25
	From birth to the age of 1	£8.50
	Between ages 1 to 4	£4.25
VITAMINS	Between Week 10 of pregnancy and breastfeeding periods	56 tables for 8 weeks (1 tablet/day)
	Between the ages of 0 and 4	280 drop for 8 weeks (5 drops/day)

Today, a growing concern in the UK is the low uptake of the Healthy Start Scheme, partly attributable to the complex application process (see Figure 2) experienced by eligible applicants. According to Landon (2021), local uptake of the scheme decreased from 67% of eligible families in January 2017 to 56% in January 2020. Poor communication and inadequate promotion of the scheme were identified as key contributory factors. It is important to note that uptake data is estimated due to inadequate mechanisms for capturing data once families access the scheme. Hence, it is critical to develop a system to better understand the systemic factors contributing to the poor uptake of the Healthy Start Scheme (Lucas *et al.*, 2013). One way of identifying these factors is by carrying out a '*Hierarchical Task Analysis (HTA)'*. An HTA describes the activity or workflow to be analysed in terms hierarchical goals, sub-goals, operations, and plans (Stanton *et al.*, 2013). Often used in the healthcare sector, adopting this methodology will help identify systemic factors acting as implementation barriers of the Healthy Start scheme that affect accessibility to the scheme for those who need it (see Figure 2).

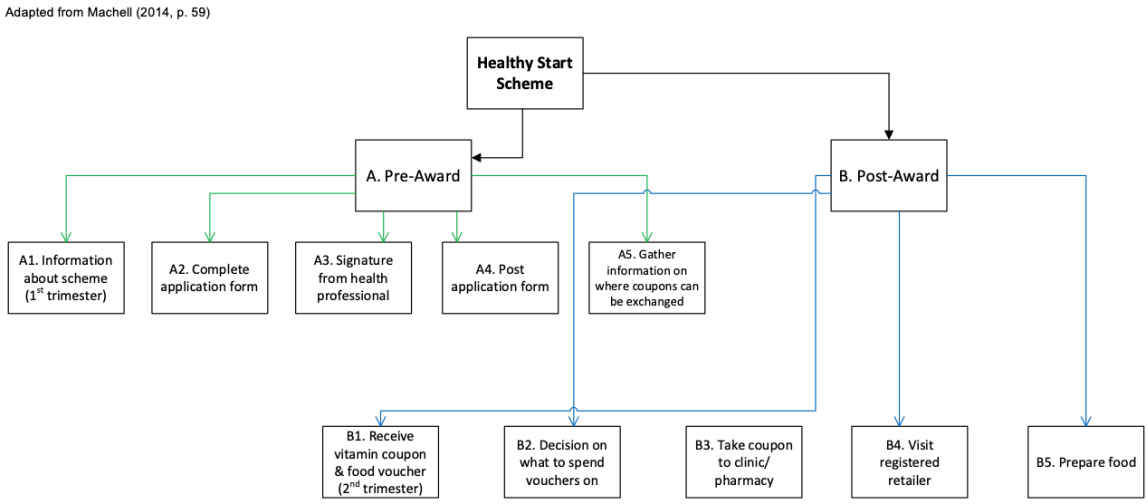

Figure 1: Skeleton Hierarchical Task Analysis (HTA) to evaluate the challenges of accessing the Healthy Start Scheme

Since 2021, vouchers were replaced by pre-paid cards, then in 2022, prepaid cards replaced paper vouchers, currently used by over 100,000 people. A report by Defeyter *et al.* (2022) highlighted the limitations of prepaid cards such as humiliation (due to cards being declined at tills) leading to anxiety and embarrassment, hardships due to shop staff being unfamiliar with cards, and difficulties contacting government helplines leading to a higher reliance on food banks. Furthermore, women do not get access to vouchers until they are 20 weeks pregnant, including access to nutritional supplements despite being advised to take nutrition supplements (e.g., folic acid) as soon as they decide to start trying for a baby and during the first 12 weeks of pregnancy (Royal College of Obstetricians & Gynaecologists, 2014). Limited access to nutrition is another downside because the list of food products available to purchase via the scheme (fresh fruits and some fresh vegetables) would not require regular access to fuel (gas and/or electricity for cooking), adding to monthly bills. For other food products, regular access to fuel (gas and/or electricity) would be required either for storage or to cook a meal. There is a need to focus on: (1) ensuring strategies to reduce fuel poverty; and (2) balancing the food provided via the scheme such that regular access to fuel is not required to store and/or cook a meal.

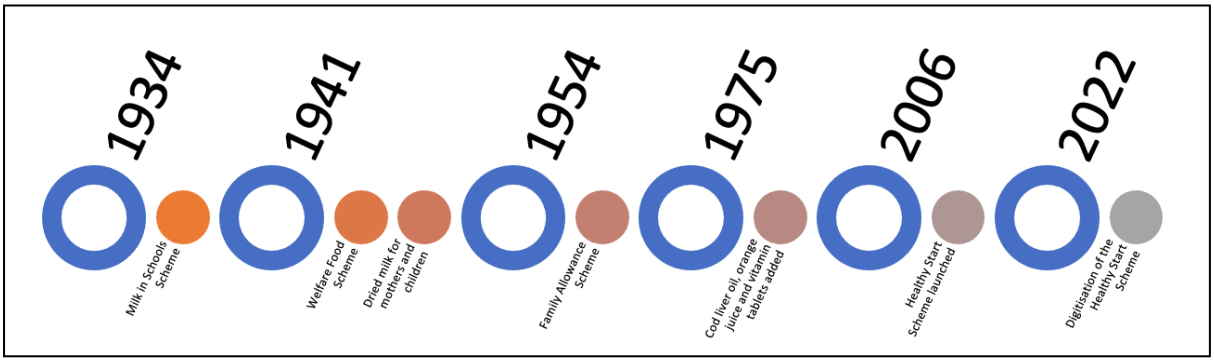

Figure 2: Evolution of the state-sponsored food assistance program in the UK

Private entity-sponsored food assistance programs in the UK

The UK has a much higher rate of food poverty than other countries. Food prices have increased 4.2% since 2020 due to inflation which has pushed a larger portion of UK households into food and fuel poverty since 2020. Approximately 4.7 million adults and 2.5 million children have experienced household food insecurity (Goudie and McIntyre, 2021). In the UK, approximately 2.5 million people relied on private entity-sponsored food assistance programs in 2020/21 (The Trussell Trust, 2022). These numbers only represent beneficiaries of approximately 1,400 food banks from approximately 2,572. Nearly two decades before The Trussell Trust's report (2022), similar factors motivated the launch of the first private entity-sponsored food assistant program in the UK. Founded in Salisbury in 2000, The Trussell Trust was born out of the poverty, deprivation, and unequal distribution of wealth that led a hunger crisis (Williams and May, 2022). The Covid-19 pandemic and recession only exacerbate the situation. Food assistance programs like food banks, soup vans, and subsidised community markets have been established to bridge the food security gap (Bazerghi, McKay and Dunn, 2016). The purpose, operation method, and limitations of three commonly occurring private entity-sponsored food assistance programs in the UK will be discussed in the following sections.

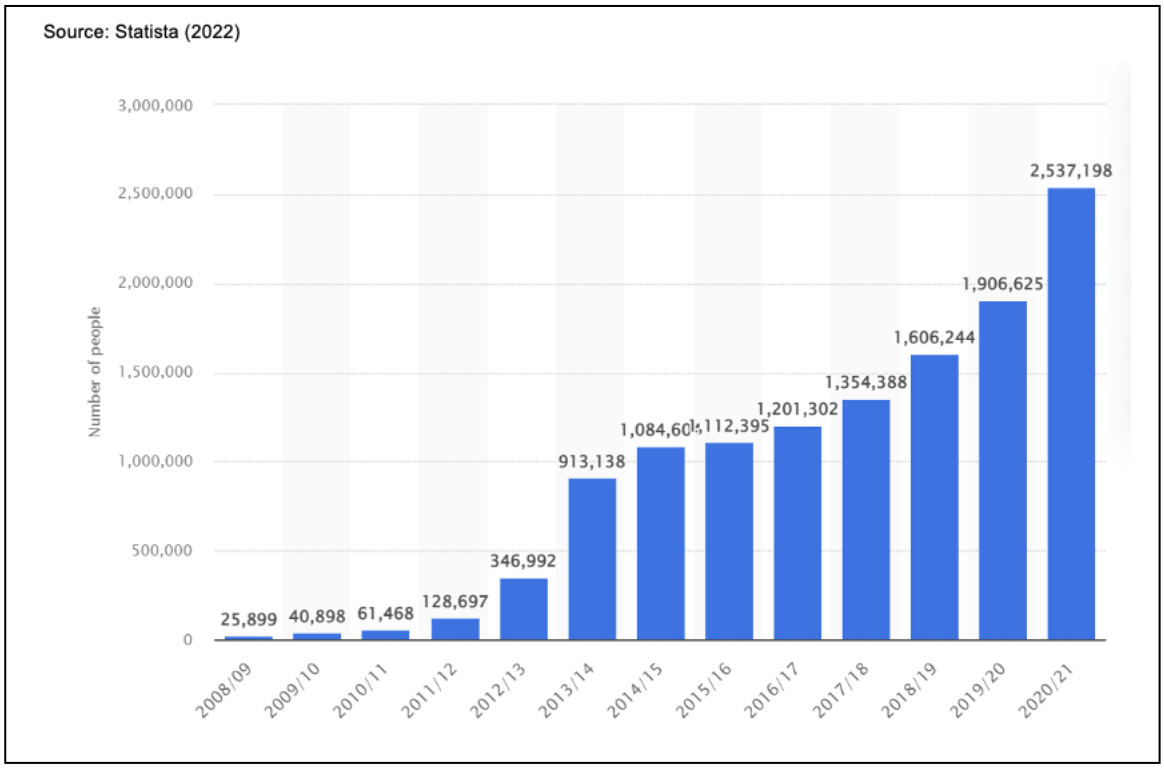

Figure 3: Number of people receiving emergency food parcels from Trussell Trust food banks in the UK

Source: Statista, 2022

In addition to The Trussell Trust food banks, the UK also has independent food banks, approximately 1,172 of which are registered with the Independent Food Aid Network (IFAN), established in 2017. A survey by the Independent Food Aid Network (2022) stated that 93% of independent food banks reported an increase in the need for their services in 2022, with more than 80% reporting that they have struggled with food supply issues since February 2022, while 78% reported a reduction in food and/or financial donations due to a cost-of-living crisis in the UK.

Food banks

Often confused with pantries and larders, food banks collect, store, and distribute donated and/or purchased food to food insecure families (Sunuwar, Singh and Pradhan, 2020). Food assistance programs in high-income countries tend to not meet the needs of their citizens (Loopstra and Tarasuk, 2012; Lambie-Mumford, 2013). People/families who are economically, geographically or socially disadvantaged can use food banks as temporary measures to bridge the food security gap - however, food banks cannot provide permanent

food security (Renzaho and Mellor, 2010; Handforth, Hennik and Schwartz, 2013; Middleton *et al.*, 2018).

Food banks cater to people in two ways: (1) by providing cooked/uncooked food directly to beneficiaries (e.g., IFAN food banks); and (2) by redistributing food to charities that provide groceries and other essential household items (e.g., Trussell Trust food banks). In addition to large warehouses, some food banks are run by churches or community service centres. It is important to note that not all projects are guided by religious principles. Every food bank operates on a similar model because they rely on donations and oversupply from industry (Riches, 2002; Tarasuk *et al.*, 2014). However, the option to purchase food is not available to all food banks due to limited resources.

Volunteers at food banks prepare pre-packaged parcels or run pseudo-supermarkets where beneficiaries can select food items. Since food poverty is closely linked with transient and persistent financial poverty (Mahadevan and Hoang, 2016; Omotayo *et al.*, 2018), many food banks provide more than just food parcels; they provide other services including debt management, skill development, and education on budget cooking. Despite the differences in operational logistics among food banks, their purpose remains the same: to provide nutritious food and other household essentials to those in need (Middleton et al., 2018), yet fresh produce is often lacking in food donations. Processed foods' lower prices, longer shelf-life, and food safety are reasons why most food banks prefer not to offer fresh foods. Consequently, most food parcels contain tinned and dried food. While food banks are meant to act as a 'stop-gap measure' (Iafrati, 2018), anecdotal evidence and reports by The Trussell Trust show that people rely on food banks for longer periods (Perry *et al.*, 2014). An additional cause for concern is the rising fuel prices which would contribute to poor food utilisation due to restrictions in the use of existing cooking methods.

Community kitchens

Communities own and operate these kitchens with the hope of becoming self-sufficient after a period of community support (Iacovou *et al.*, 2013; Loopstra and Tarasuk, 2013) and reducing food poverty and social isolation (Mundel and Chapman, 2010). As opposed to creating a dependency on emergency food parcels (Engler-Stringer and Berenbaum, 2006), community kitchens focus on building beneficiary resilience through skills training and community development endeavours (Loopstra and Tarasuk, 2013). Budgeting, menu

planning, food safety, cooking, and nutrition training are often provided to stakeholders and where meal preparation is a regular function of community kitchens. As a result, food is shared among participants and other food insecure members of the community. In addition to improving social interaction, community kitchens reduce social isolation (Iacovou et al., 2013). As well as providing skills, involving active participation, and reducing the need to access charitable food sources (food banks), community kitchens improve beneficiaries' dignity and self-worth. Examples of Community Kitchens in the UK are displayed in Table 3.

Table 3: Examples of community kitchens in the UK, the beneficiaries, services provided, advantages and methods of ensuring economic stability

Adapted from The Guardian (2014)

Community Kitchen	Location	Beneficiaries	Services Provided	Advantages	Cost Management
Cracking Good Food	Manchester	People dealing with complex issues such as: 1. Homelessness 2. Poverty	1. Open-door meals 2. Vet clinics 3. Hairdressing 4. Benefit support Education/Training 1. Pantry Pod (cooking skills using ingredients from food assistance programs) 2. Education on food waste reduction, nutrition, and sustainability 3. CookBank: Reducing food insecurity in local communities (budgeting and accessing nutritious food) 4. Food hygiene and allergen awareness Level 2 training Activities 1. Online cooking classes	1. Skills & confidence development 2. Improved health and wellbeing	Gift vouchers Donations Business membership (CSR opportunities for businesses)
Community Chef – Lewes	Lewes, Sussex	1. Carers 2. Families 3. Communities	Education/Training 1. Cookery and bakery classes	1. Skills & confidence development	Provides food safety and hygiene training to commercial
Grassmarket Community Project	Edinburgh	People dealing with complex issues such as: 1. Homelessness 2. Mental health problems 3. Physical health problems 4. Learning difficulties 5. Poverty 6. Substance misuse 7. Physical abuse	Social Enterprise 1. Café jobs 2. Events management 3. Catering service 4. Furniture-making 5. Tartan textiles making Education/Training 1. Literacy workshops 2. Gardening 3. IT skills 4. Sewing Activities 1. Hill-walking 2. Mindfulness 3. Drama 4. Art 5. Choir 6. Book group 7. Creative writing 8. Meditation 9. Film-chat Community service (free)	1. Employment opportunities 2. Skills & confidence development 3. Relationships within communities 4. Improved health and wellbeing	Customers and supporters can buy £5 meal vouchers via the café counter or online shop. The voucher is provided to someone in need.

Community Kitchen	Location	Beneficiaries	Services Provided	Advantages	Cost Management
Community Kitchen			2. Cooker leader training 3. Food hygiene training Activities 1. Workshops Social Enterprise 1. Running community events (hosting supper and lunch clubs; food and film nights)	2. Caters to all individuals irrespective of their socio-economic status 3. Aims to create a community spirit by passing on information on: (1) sharing and eating food with other people; and (2) responsible sourcing and consumption	organisations and private individuals, and other services such as "for hire smoothie bikes".
Food Cycle	Nationwide	People ("guests") from all walks of life, including those dealing with complex issues such as: 1. Homelessness 2. Poverty	Education/Training 1. Education about nutrition 2. Cooking with surplus ingredients	1. Connect communities through food – volunteers and guests eat the meal together leading to conversation flows, break down of barriers and forming of new friendships 2. Support mental health, wellbeing and reduce loneliness 3. Nourish the hungry 4. Promote sustainability 5. Inspire change through a *community dining model* and *storytelling* to engage the wider audience	Volunteers collect surplus food and cook it into meals which are served to guests from the local community.

A community kitchen's operational model incorporates skills training that improves food choice. Following the training, beneficiaries increased their fruit and vegetable purchases. The meals prepared in a communal kitchen help to alleviate some of the food insecurity issues related to food poverty (Engler-Stringer and Berenbaum, 2006) . As beneficiaries and donors become more aware of nutrition, they may seek alternatives to food bank parcels. However, nutrition awareness alone will not improve food stability. By adopting a systems thinking approach, the program can return to being an emergency stop-gap measure (Lang, 2022; Monroe, 2022). The limitations and barriers of setting up a community kitchen are rarely discussed in academic papers despite their apparent advantages.

Social supermarkets (SS)

Founded in the late 1990s, SS's receive used consumable products (often donated by manufacturers and retailers) and resell them at heavily subsidised prices (due to wrong labels, slight physical damage). The goods are sold to poor or at-risk consumers (Holweg, Lienbacher and Zinn, 2010). SS is a social innovation that promotes social solidarity, and as such, food supply chains and social needs are interconnected through social supermarkets (Klindzic, Knezevic and Maric, 2016). Donors, volunteers, philanthropists, and corporations contribute time, resources, and/or services to these non-profit supermarkets. By allowing people in lower socio-economic positions (SEP) to choose and purchase goods at affordable prices, SS allows them to preserve their dignity as well as meet their material needs (Maric and Knezevic, 2014). Furthermore, SS can only offer a limited selection since they rely on donations. They are normally consumables that would otherwise be thrown away. (Holweg, Lienbacher and Schnedlitz, 2010) state that access is limited to those at risk of poverty (usually through identity cards), yet here has been little academic research on SS since the 1990s despite their growth.

'Community Shop' is the UK's largest surplus distributor. By educating people on poverty, hunger, and food waste, the Community Shop aims to not only help people in lower SEP, but also change mindsets. Their SS is distributed nationwide through retailers, manufacturers, food service providers, and logistics companies. Also, surplus products from well-known brands are donated at reduced prices through the network of donors. Two entities make up their operating model: (1) Company Shops (which are available at market value to members); and (2) Community Shops (social supermarkets). Directly donated food and other products can be sold at reduced prices at the SS. Members purchase food at market value at Company

Shops, and the proceeds go to Community Shops when food cannot be sent directly to SS. As a result, Community Shops make additional purchases to update their stock. In addition to donated goods, Community Shops can make their own purchases. When the quantity of products donated exceeds the storage capacity of Community Shops, or when large batches are discarded due to factors like incorrect labelling, products are sent to Company Shops. The 'Community Shop Model' provides diverse products to a wider group of people (including people in lower SEP levels); reduces waste; and returns surplus to retailers and manufacturers.

By giving beneficiaries freedom of choice in the SS model, they could potentially purchase more food without consuming fuel. The assumption is that non-processed food products will be readily available and beneficiaries will have a good understanding of nutrition. Moreover, SS are sparsely distributed across the UK, which is a limitation. Consequently, some potential beneficiaries will become dependent upon food banks due to this barrier.

Conclusion

Most community food assistance programs provide assistance to people suffering from poverty, but their definitions are often based on household income and ability to afford food and other essentials. The frequent issuance of food requiring fuel often takes a back seat to fuel poverty. Furthermore, the requirement for longer shelf-life may facilitate the donation and distribution of food that requires fuel. Hence, limitations at the beneficiaries' end need to be explored further. Baker, Mould and Restrick (2018) state that it is important to adopt a complex system perspective to not only identify and work with those currently experiencing fuel poverty, but also those households who have become vulnerable to fuel poverty due to external factors. It is vital that food and related social policies are designed with all stakeholders, including beneficiaries. There would be less gap between what the policy is meant to do and what it actually does. The key to such an approach is communication, coordination, and collaboration, therefore, it is crucial that we acknowledge the interconnections between social and food issues at macro, micro, and meso levels to achieve optimal food sustainability outcomes.

It is clear from the evidence put forward, the existing food system in the UK needs a rethink. As opposed to utilising a system where only citizens higher up the socioeconomic strata are food and financially secure, more needs to be done to ensure food and economic justice for

people for everyone. Food banks are not a long-term solution of the food poverty issue. Other community feeding models such as community kitchens, hubs and social supermarkets are proving to be more popular and sustainable due to their holistic approach towards improving public health. Regardless of the model adopted, the long-term target of the state should be to adopt a food system that does not rely on charitable food aid, and where adequate and nutritious food is affordable to all. Similarly, more work needs to be done to adopt a model and implementation plan towards a mature global food system, i.e., one in which every citizen can have access to healthy food while not having to compromise on their access to fuel. Inspiration could be drawn from other similar concepts such as the Center for Disease Control and Prevention's "One Health" approach (see Figure 5), and to develop a mature global food system.

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