Incorporating Food into Manchester's Climate Change Response

Part Two: Transforming Food Provision through Sustainable Innovation

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Summary

As the risks from climate change to our environment, economy and society manifest with greater severity, sustainability concerns are now a focal point for policymaking at global, national, and local levels. The food sector, however, continues to elude leading sustainability forums as an area for urgent action, **even though one-third of global greenhouse gas emissions (GHG) result from the food system** (Crippa et al., 2021). Food failed to appear on key agendas at the recent United Nations (UN) COP26 Climate Change Conference (So, 2021), representing a lost opportunity for coordinated action. Waiting for issues to be deliberated on the global stage, before taking national or local responses, is no longer a feasible way forward. In the UK, efforts to address food system unsustainability are gaining momentum through recommendations such as the National Food Strategy (Dimbleby et al., 2020, 2021), yet more can be done to stimulate change on the ground, in our cities and neighbourhoods. **This is especially important in Manchester**, where food has been identified as a hotspot for Scope 3 consumption-based carbon emissions (Jones, 2019; Wendler & Blakey, 2021), and where the consumption of food and drink accounts for 16% of the City's carbon footprint – on par with aviation (MCCA, 2021). The climatic effects of the food system result in addition to economic and social impacts, which include the perpetuation of food insecurity in the form of unequal access to healthy, affordable, convenient, and appropriate meals for all (Dimbleby et al., 2020).

In the context of promoting a green and just recovery to the COVID-19 pandemic in Manchester, and in pursuit of net-zero carbon emissions by 2038, the food system must be integrated into Manchester's climate change response. To facilitate this objective, Part 1 of this report (Aziz & Mylan, 2021) detailed the key problem areas of the food system, namely: (1) Food loss and waste; (2) Excessive Meat Consumption; (3) Single-Use Plastic; and (4) Food Insecurity. **Part 2**, as presented here, builds on this foundation **by offering ten recommendations to facilitate a transition in Manchester towards a more equitable and zero-carbon food system**. These recommendations are inspired by six case studies, which draw on local and global examples of sustainable food practices involving private, public, and third sectors.

Overview of Sustainable Food Innovation Case Studies

	Case Study	Problem Area	Innovation	Function
1	OLIO	Food Waste	High-technology entrepreneurship	Digital sharing platform facilitating P2P and B2C exchanges of food.
2	Mobile Food Markets	Food Insecurity	Low-technology micro-business	Provide access to fresh, healthy & affordable foods in areas where provision is poor
3	Ghent, Belgium	Meat Consumption	Local government-led public information campaign	Coordination of a weekly meat-free day for the city
4	barePack	Single-use Plastic	Low- and high-technology entrepreneurship	Digital platform enabling B2C transactions using reusable containers
5	School Meals, Finland	Meat Consumption + Food Insecurity	Public sector provisioning strategy	Delivery of free school meals to all pupils; meals designed with sustainability priorities
6	Business Growth Hub	All Areas	Business support network	Holistic consultancy services for food startups & SMEs

The City of Manchester has a combination of commercial, technological and governance expertise that can be leveraged in support of sustainable food initiatives; the challenge is how to best organise the City's resources. **Both parts of this report suggest a mission-led innovation strategy as a method of uniting the City's diverse stakeholder groups behind the cause of food system transformation**. This strategy prioritises the disaggregation of complex problems into pragmatic steps, as a basis for cross-sectoral engagement and integrated action (Mazzucato & Dibb, 2019). In the context of the COVID-19 Recovery, a mission-led strategy enables the more equitable sharing of resources and responsibility for a common cause, preventing the burden of innovation management from falling on to a single set of actors.

The emphasis on collaboration is embedded in ten recommendations, which are listed below. The recommendations offer qualitative insights of how to change Manchester's provision of food to support sustainability objectives, taking into account the diversity of local stakeholders and networks. The recommendations are premised on the recognition that the city of Manchester produces relatively little food, **but performs a significant role in generating demand for food and shaping food consumption practices**. Not only do these practices contribute 16% of Manchester's Scope 3 carbon

emissions (MCCA, 2021), but they affect our population's health and wellbeing (see Part 1), particularly by promoting chronic diseases and by failing to address adequately the issue of food insecurity. In response, the recommendations in this report encompass the climatic, social and ethical dimensions of sustainability. Transformations to the food system must be just and equitable, in addition to supporting the net zero agenda.

Recommendations in Brief

1. Support sustainable food entrepreneurship in all its forms

In the case of food, entrepreneurship can involve encouraging new consumer markets, which cater to the increasing demand for sustainable food and drink options. McKinsey & Company (2020: p.3) have observed that: **'Increased visibility and consumer demand for sustainable and perceived-healthier food is one of the most consistent long-term food trends'.** Food entrepreneurship has the potential to disrupt unsustainable practices, shaping societal behaviour by offering alternative modes of provision and consumption.

2. Address food insecurity by improving access to sustainable food

Estimates suggest that in April 2020 around 3 million people lived in households where someone had to skip some meals (Loopstra, 2020). In Greater Manchester there are currently 261 food support providers across 10 councils (GMPA, 2021). The number of food charities increased as a consequence of the austerity measures taken in the aftermath of the Financial Crisis (e.g. Loopstra et al. 2016; Reeves & Loopstra 2020). It is now generally agreed that welfare assistance and cash first approaches are the most effective means to counter food insecurity. Beyond these means, innovations such as mobile food markets can serve as an alternative to charitable provision. Not all people living in food poverty are willing to rely on charitable providers, as receiving food support can come with feelings of embarrassment and shame (e.g. Loopstra & Tarasuk, 2015; Purdam et al, 2016). New sources of fresh, affordable food in communities without convenient access to such provision can be an impactful solution.

3. Acknowledge that the failures of previous sustainable food initiatives can be attributed to the way they were implemented, rather than to the concepts themselves

Some of the initiatives outlined in this report have been attempted before in the Greater Manchester region. For example, the concept of a mobile food market has been trialled on more than one occasion, but not in a form that was commercially sustainable. This does not necessarily represent the failure of a concept, but rather the absence of a viable strategy for delivery and implementation. By exploring the implementation strategies deployed in international markets, and the opportunities offered through Manchester's networks and infrastructures, factors can be identified to increase the likelihood of success for sustainable food initiatives.

4. **Promote new food businesses to catalyse local economic growth and job creation for a green and just COVID-19 Recovery**

The ability of startup ventures to leverage technology for fast growth means that they can play an important role in the recovery of local economies. For example, startups are estimated to contribute £196 billion annually to the UK economy (Phillips, 2019), part of which results from their role as engines of job creation. Analysis by *The Financial Times* finds that 'Entrepreneurs who create jobs generate a disproportionately large share of new employment' (Moules, 2021). Sustainable food startups can address food system problems, stimulate economic growth and create jobs simultaneously, thereby increasing the likelihood of achieving a *green and just* COVID-19 Recovery in the years to come.

5. **Continue to resource the Manchester Food Board and Manchester's membership of the Sustainable Food Places network**

Enabling exchange of knowledge and best practice is key for supporting a transition to more sustainable food provision. The Manchester Food Board (MFB) plays a key part in this, contributing to the delivery of its Action Plan to promote sustainable and high-quality food, and address key food system challenges. The MFB also facilitates relationships with other cities through its membership of the Sustainable Food Places network, which supports cross-sectoral engagement across the UK to tackle food system problems. We recommend that MFB continue to be resourced for this important work.

6. **Adapt novel practices from climate change experiments in other cities for Manchester**

Climate change experiments are social tests designed to find opportunities for reducing negative environmental impacts. Local governance institutions can act as promoters, enablers and partners to co-create such initiatives with the private and third sectors (Fuenfschilling et al., 2019). Experiments that have yielded positive results elsewhere can be adapted to our local context. This process of adaptation is important. To "import" the strategies of other cities without due consideration for Manchester's specific context is to invite failure. Such mistakes can be avoided, for example, by testing key assumptions in localised pilots and inviting Manchester citizens to participate in their evaluation. Through citizens' feedback, sustainable food initiatives can be tailored to accommodate local sensitivities and address specific needs, thereby increasing longer term feasibility.

7. **Promote innovation through networks and partnerships rather than resource intensive bureaucracies**

Initiatives managed through public – private partnerships can generate a valuable momentum for change, as highlighted in Ghent's meat-free Thursday programme. After Ghent's municipal authorities commissioned the Ethical Vegetarian Alternative to lead a communications campaign, a plethora of partnerships developed across schools, universities, hospitals, hospitality venues, NGOs, and local government, in the absence of resource intensive bureaucracies and hierarchical forms of managerial control. This is commensurate with mission-led innovation strategy, which advocates the creation of

'frames and stimuli for innovation' (Mazzucato & Dibb, 2019: p.2) rather than direct management at the level of individual organisations.

8. Recognise that new initiatives are unlikely to 'scale up' on their own

Manchester continues to nurture multiple small scale food projects. When initiatives are seen to generate positive outcomes, questions arise about how to expand their reach, involve more people, and deliver even greater results. Taking stock of lessons learnt from successful initiatives can support those that do aim to expand, as well as shielding emerging initiatives from common pitfalls. The aim is to develop, catalyse and reproduce initiatives in a manner that is both commercially and environmentally sustainable. Institutions in Manchester such as the **GC Business Growth Hub** can leverage an array of networks to support entrepreneurial activity, opening opportunities for financial and strategic input to give new ventures the best chance of success.

9. Recognise that well managed public – private relationships can increase the likelihood of success for new ventures

The example of mobile food markets called Green Carts in New York City demonstrates that public-private partnerships can be imporant for developing and sustaining new markets. Through policy instruments such as legislation and financial subsidies, the New York City Council catalysed the deployment of 477 Green Carts across the city, thereby stimulating supply through new market creation. Additional funding enabled community organisations to partner with Green Carts and stimulate customer interest for produce, **thereby aligning supply with demand**. This highlights how dedicated strategies which catalyse both market creation and public demand for that market can support sustainable food initiatives to launch and scale up.

10. Support the development of catering systems that prioritise health and sustainability over profitmaking

Public food provisioning, through schools, hospitals, prisons and staff catering, has the potential both to provide healthy and nutritious food and to steer businesses to more sustainable and socially beneficial practices. Following the recent discontinuation of the 'Manchester Fayre' school meal service, which held a Food for Life Bronze Award for sustainable catering, schools reliant upon this service will be required to make their own arrangements. This often means contracting multinational institutional caterers for whom health and sustainability may not be a principal concern. Despite the challenges of operating public catering services, the value they can provide for health and sustainability agendas should not be overlooked in local policymaking.

A Sustainable Food Mission for Manchester

Food is a foundational aspect of our daily lives, but the food provisioning systems which deliver our meals from farm to fork also deliver a range of negative impacts on our climate and society. Part 1 of this report focused on these impacts, identifying **four key problem areas of food system unsustainability**: (1) Food loss and waste; (2) Excessive Meat Consumption; (3) Single-Use Plastic; and (4) Food Insecurity (Aziz & Mylan, 2021). These problem areas are identifiable at global, national and local levels, and they reflect broad areas of agreement across existing initiatives for food system reform. Efforts to address such issues in the UK are gaining momentum through recommendations such as the National Food Strategy (Dimbleby et al., 2020, 2021), which is currently awaiting full response from the UK government. Globally, food system unsustainability is being addressed through collaborative efforts, such as the Glasgow Food and Climate Declaration, for which 30 international cities (including Manchester) have committed to developing integrated food policies for tackling climate change (GFCD, 2021). **Recommendations recognise the importance of driving food system change through local action**, considering in particular the role of cities as key actors within a wider context of economic and regulatory reforms. To contribute to the evidence base for how Manchester can address key problem areas, Part 2 of this report presents **six case studies and ten recommendations** aimed at supporting the implementation of a more equitable, zero-carbon food system in Manchester.

Recent efforts to address climate change by decarbonising sectors such as transport and energy have highlighted the potential of cities to transform environmentally and socially significant systems of provision. **Such efforts, however, are less visible with regard to the sustainable provisioning of food.** For instance, the Clean Growth agenda for decarbonisation in the *Greater Manchester Local Industrial Strategy* makes no reference to food systems, even though the consumption of food and drink accounts for 16% of the City's carbon footprint, which is on par with aviation (MCCA, 2021). Although such omissions have started to be addressed with the recognition of **food as a hotspot for the City's Scope 3 consumption-based carbon emissions** (Jones, 2019; Wendler & Blakey, 2021), and with the identification of food as one of seven 'headline areas for urgent action' in the *Manchester Climate Change Framework 2020-25* (MCCP & MCCA, 2020: p.24),[1] further work remains to specify coherent pathways for food system reform, particularly to support Manchester's pursuit of net-zero by 2038.

Although Manchester produces relatively little food, its position as a major urban centre means that it performs **a significant role in generating demand for food and shaping food consumption practices**. It is by engaging with the activities and infrastructures associated with food consumption, such as the provision of meals in public contexts, food processing in our retail and hospitality sectors, and food delivery and distribution services, that Manchester can best leverage its position to catalyse food system transformation. Moreover, Part 1 demonstrated that changes in food demand and consumption would benefit not only our climate, but also Manchester's local economy and the health and

[1] Scope 3 emissions include the emissions arising from goods and services used within cities, even if a significant proportion of those emissions are produced elsewhere (see Wendler & Blakey, 2021 for a full description of Manchester's consumption hotspots).

wellbeing of its population, through the co-benefits which result from the sustainable provisioning of food.

Part 1 of this report introduced a Sustainable Food Mission as one way in which Manchester stakeholders can facilitate transformation in the food system. The systemic nature of the food industry, lack of regulatory power at the city level, and the extent of carbon reductions sought in the pursuit of net zero, mean that **cross-sectoral engagement** and **integrated action** are essential for a successful programme of change. Historically, *missions* have been deployed to galvanise collaboration between industries to overcome complex challenges. This takes shape by disaggregating complex problems into pragmatic steps, around which different industries can engage (Mazzucato & Dibb, 2019). Manchester's Sustainable Food Mission, as outlined in **Figure 1**, can serve as a rallying objective and organising framework for action across the range of public, private, and third sector actors operating in the City's food system. Rather than prescribing a single course of action, the Mission can encompass multiple innovation journeys, stimulating stakeholders to innovate and collaborate in ways which align with their own interests and capabilities.

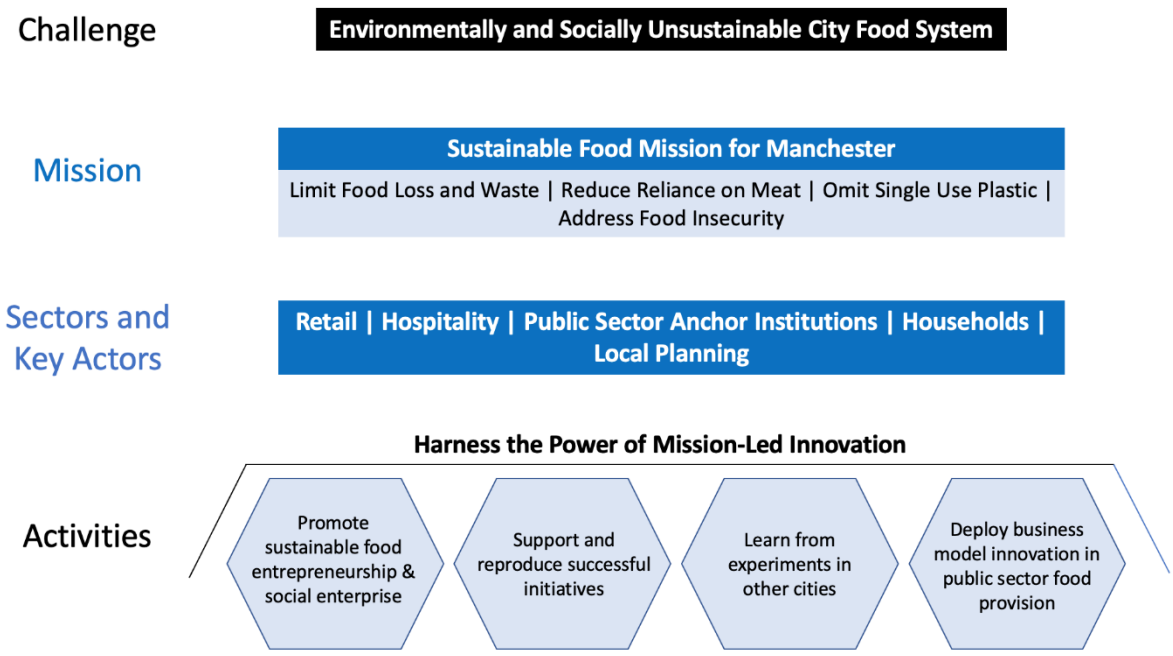


Figure 1. Outline of a sustainable food mission for Manchester, promoting cross-sectoral collaboration and integrated action. (Source: Authors).

To that end, this report outlines **four sets of cross cutting activities**, which could serve to generate engagement with the Sustainable Food Mission by promoting food innovation and collaboration between Manchester stakeholders from different governance domains. The potential of these suggestions is demonstrated with the inclusion of 6 concrete case examples featuring:

- high-technology startups (i.e. OLIO and barePack);
- low-technology micro-businesses (i.e. mobile food markets);
- public-private networks (i.e. GC Business Growth Hub);
- public policy initiatives (i.e. Ghent, Belgium), including innovation in public sector provisioning (i.e. school meals in Finland).

These examples demonstrate that local government actors and food system stakeholders can collaborate for the purpose of *market creation and development*, rather than addressing issues as symptoms of 'market failure'. This involves ideas for developing consumer markets (e.g. for mobile food provision) and market intermediaries (that link up the supply of food with consumption); generating demand in public spaces (e.g. through public provision and procurement); and upskilling workforces to participate in developing and supporting new sustainable business offerings. While the mission can set a direction of travel, these activities serve to generate momentum towards the sustainable provisioning of food.

Sustainable Food Innovation: Case Studies

Case Study 1: OLIO

Addressing Food Waste through a Digital Platform

Overview

OLIO is a sustainable venture launched in 2015 to tackle the problem of food waste originating from both businesses and consumers (OLIO, 2021a). This is a significant problem area of the food system, with unconsumed food constituting 8-10% of global GHG emissions (UNEP, 2021). When compared to the emissions from nation-states, food loss and waste would be equivalent to the world's third largest emitter (Ritchie, 2020). A high proportion of global food waste results from households (UNEP, 2021); a trend mirrored nationally with households accounting for 70% of total UK food waste (WRAP, 2020). To address this problem, OLIO have developed an online marketplace platform that enables surplus food to be redistributed locally. Users can list their items for collection on a mobile app, and interested parties can arrange collections via private messaging (OLIO, 2021b).

The app supports the speedy establishment of connections in peer-to-peer (P2P) and business-to-consumer (B2C) fashion to enable efficient redistribution of food. 75% of all food listed is requested in less than one day and 43% in less than one hour (McMullan, 2018). OLIO now has a portfolio of corporate clients including Tesco, Sainsbury's, and Costa Coffee, who share their surpluses with consumers via B2C exchanges (OLIO, 2021c). While all P2P engagements are free of charge, revenues are generated by charging larger businesses for OLIO's services (OLIO, 2021d). To date, the startup has attracted over 4.8 million users across 59 countries, leading to almost 18 million portions of food being shared (OLIO, 2021e; 2021f). The platform has 40,000 users in Greater Manchester, including businesses such as Pret A Manger and Friska Coffee (Heward, 2019).

OLIO's Startup Journey

OLIO's current successes are built upon **lean startup methodology**, demonstrating how this approach to entrepreneurship can be applied to sustainable food. The co-founders first developed a robust **problem – solution fit**, or evidence of the problem and a clear conceptualisation of the solution. This included anecdotal evidence of difficulties in sharing food, combined with desk-based research about the global scale of food waste, and market research of public opinions towards food waste (OLIO, 2021a). The solution of a food sharing app was conceived in response, and a **proof of concept** exercise was conducted where 12 members of the public in London were encouraged to share surplus food in a closed WhatsApp group (Ibid).

The successful small scale trial led to the pursuit of **product – market fit**, which is attained when an initial product or service generates market traction and value for customers. OLIO achieved product – market fit through the development of a minimum viable product (MVP), which was a prototype food sharing app that operated only in selected areas of North London (OLIO, 2021a). The successful launch of the MVP led to **business – model fit**, or clear evidence that the startup had a scalable business model that could operate both nationally and internationally. This was recognised by the technology giant Facebook, who granted OLIO admission to Facebook's LDN_LAB incubator to support the startup's future growth and development (McMullan, 2018). The subsequent growth of OLIO's team and scale of operations has been facilitated by a series of private investments in exchange for equity (McMullan, 2018; OLIO, 2021d). Building upon these investments, OLIO's goal is to further scale their business and attain 1 billion users by 2030 (OLIO, 2021d).

Lessons from OLIO

The example of OLIO highlights how online platforms can connect food system stakeholders to tackle key problem areas, in this case of post-consumer food waste occurring in domestic and commercial contexts. In particular, the relative ease with which online platforms can scale their operations, in comparison to other business models, means that they can tackle problems at local, national, and international levels within a relatively short period of time. By integrating multiple customer segments into their ecosystems, platforms can encourage change simultaneously across different areas of economy and society. For instance, by enabling corporations such as Tesco and Costa Coffee to advertise surplus food on their platform, OLIO creates new B2C channels between large businesses and consumers which tackle a problem area. Also, by enabling P2P exchanges of food between consumers, OLIO creates new opportunities for society to play an active role in preventing waste, arguably creating a new food market based on non-commercial interactions. The ability to encourage sustainable practices across both large corporations and members of the public is a significant advantage of online platforms.

Online marketplaces offering P2P and B2C exchanges are built upon established technologies that have been in operation since the advent of the World Wide Web in the mid-1990s. OLIO innovated **by recombining these established technologies for novel purposes**, rather than by pursuing radical and risky innovations. The recombination of established technologies is usually lower risk and lower cost than the pursuit of emerging

technologies. This offers opportunities to stimulate innovation by providing information and training in relation to existing technologies, in ICT as well as food production, storage and distribution, as well as access to data, highlighting key sustainability issues and areas of consumer demand. The GC Business Growth Hub (see Case Study 6) would be an ideal forum for supporting entrepreneurs in this respect.

Case Study 2: Mobile Food Markets

Promoting Food Security and Community Health

Overview

Changing the composition of Manchester's diet, by reducing meat intake, was a priority highlighted in Part 1 for supporting both planetary and human health. The inability to access or purchase food options that promote health and sustainability can lead to a state of food insecurity. The Greater Manchester region presents high levels of food insecurity, and the Northwest has the highest number of people living in deprived food deserts (Corf, 2018; MCC & STC, 2020). Food deserts are geographic areas where residents have limited access to affordable and healthy food options, often as a result of financial constraints and/or physical distance from appropriate providers (NCCEH, 2017). **In this light, it is fundamental to recognise that access to fresh, affordable and healthy food items is not guaranteed, for it is influenced by economic and geographical disparities.** On the one side, people with limited financial means may struggle to afford a healthy food basket.[2] On the other side, residential areas that suffer from the inadequate provision of affordable healthy options can encourage a so-called 'obesogenic' environment in which food choices are conditioned by unhealthy options on offer.

Mobile food markets are an innovation which aims to address this issue by facilitating access to a range of unprocessed 'fresh' foods such as fruit and vegetables. Arising primarily in the United States in response to food deserts, they offer food at a lower cost to the vendor than would result from the establishment of brick-and-mortar stores (Zepeda et al., 2014), and sometimes at a lower cost to the consumer in order to accommodate economic disparities (Robinson et al., 2016). Their form ranges from repurposed vehicles such as trucks, buses, and semi-trailers complete with refrigeration, cash-registers, and electronic retail equipment (Zepeda et al., 2014), to low-cost carts traversing local neighbourhoods (Leggat et al., 2012). Mobile markets can therefore serve as a direct response to food insecurity, yet they have received relatively little attention either in the UK or globally (Zepeda et al., 2014; Robinson et al., 2016). This section draws upon examples from the United States – often referenced as the home of the first notable mobile food market, the *People's Grocery Mobile Market* in West Oakland, California, which launched in 2003 and served 3500 customers annually (e.g. Zepeda et al., 2014; Robinson et al., 2016). By 2016, mobile markets were operating in about fifty US communities, including parts of New York City (Robinson et al., 2016), and therefore they serve as examples for consideration by major urban centres such as Manchester.

[2] An alternative consideration is offered by Springmann et al. (2021)., who suggest that the long term costs of healthy and sustainable dietary patterns may be lower than for current diets. A response to this would be that, for financially insecure communities, long term gains are an insufficient premise for food choices that exacerbate short term financial pressures.

A mobile food market (Green Cart) in New York City's Bronx neighbourhood offering fresh produce. (Source: Vandebroek & Balick, 2014: p.186).

Insights from the United States

In the US, mobile food markets have developed most successfully through public – private partnerships, where financial resources, skills, and other forms of support are shared between parties. These can include: **funds and competitive grants** from federal agencies, namely the US Department of Agriculture (Zepeda et al., 2014); **strategic and technical toolkits** to support market launch, such as the Veggie Van Toolkit developed by the University at Buffalo and the University of North Carolina; **and legislation** to enable the rapid establishment of mobile food markets, such as New York City's Local Law 9, ratified by the City Council and Mayor to provide 1,000 permits for new fruit and vegetable businesses called 'Green Carts' (Leggat et al., 2012). Moreover, NYC's Green Cart initiative constitutes one of the most extensive state-led support schemes for mobile food, where public – private partnerships provided vendors with technical knowledge about business creation and promotion, and remote payment equipment was provided to vendors through local state assistance (Ibid). The Green Cart initiative was therefore a means for tackling problems with the local population's access to food, for providing employment through new micro-enterprises and for upskilling the urban workforce (Ibid).

Academic research into the outcomes of mobile food markets is relatively scarce (Zepeda et al., 2014; Robinson et al., 2016). Nevertheless, initial findings suggest that these innovations hold promise as a strategy for tackling food poverty and nutritional deficiencies. NYC's Green Carts scheme was deployed precisely in areas with a high prevalence of diet-related disease and where the consumption of vegetables and fruits was lowest. For example, in 2012, 200 Green Carts were active in the underserved areas of the Bronx, and for such areas it was reported that at least 14% of residents had not consumed

any fruits or vegetables the previous day (Leggat et al., 2012). According to the City's Department of Health and Mental Hygiene (DOHMH), the percentage of food establishments selling both fruit and vegetables often increased where Green Carts were active, but not in other areas (Ibid). This suggests that Green Carts increased local demand for fresh produce, **turning fruit and vegetables into sources of competitive advantage** for local establishments, and therefore changing the nature of food supply in areas dominated previously by processed food provisioning (Ibid).

Analyses of other mobile food markets have also offered positive results. For example, in lower-income areas of North Carolina, the communities visited by a mobile food market known as The Veggie Van consumed 3.6 cups of fruit and vegetables per day, as opposed to 2.8 cups in the communities without the Van (Leone et al., 2018). Positive qualitative outcomes were also recorded in the areas visited by the Van, such as greater ease for cooking vegetable dishes and greater appreciation for cooked vegetables among family members (Ibid). Furthermore, The Veggie Van dispensed nutritional education and cooking skills (Ibid), creating co-benefits to accompany the provision of produce. This is a feature detected in other assessments of mobile food markets:

> **'Many mobile markets have explicit community development and nutrition education goals. They aim to create a sense of community among shoppers and vendors… [and] to educate consumers about the importance of a healthy diet and how to prepare the products they sell' (Robinson et al., 2016: p.879).**

Source: Martin, 2013

Lessons from Mobile Food Markets

Mobile food markets have the potential to address certain aspects of food security and shift diet toward more climate-friendly foodstuffs, by increasing access to the range of foods in areas where provision is poor. These areas often include lower-income communities experiencing varying degrees of food insecurity, where processed foods are more accessible than wholefoods such as vegetables and fruit. But mobile food markets are not without their own challenges, notably their financial viability. Both academic and media reports have highlighted the difficulties for mobile vendors in covering operating expenses (e.g. Peters, 2014; Robinson et al., 2016), meaning that external support is essential, particularly during early phases before the customer base is established. Given the relative nascency of mobile food markets as a business model, however, there is significant potential for further innovation, both in terms of the public – private partnerships that underpin such businesses, and in terms of the entrepreneurial strategies and technological capabilities of the markets themselves. For instance, a relatively low-cost initiative to expand the customer base of mobile food markets would be the introduction of social media marketing. The launch of a mobile food market scheme in Manchester, underpinned by strong public – private support networks, could offer great potential for further business model innovation. The scheme could interact with and benefit from existing urban growing initiatives, and provide a diversification opportunity for established market traders and independent food retailers looking for new business channels.

Case Study 3: Ghent, Belgium

A coordinated cross-city approach for reducing meat consumption

Overview

Since 2009, the city of Ghent has implemented a public campaign to reduce meat consumption, in support of climate goals and the improvement of public health (WWF, 2012). This campaign features meat-free Thursdays ('Donderdag Veggiedag'), with organisers stating that 'decreased meat consumption is the most efficient measure to reduce the ecological footprint of food' (cited in WWF, 2012). **Donderdag Veggiedag has been found to result in substantial reductions of meat consumption among participants**, who constitute between one-third and one-half of the city's population (Ettinger, 2018). The success of the initiative has led to its emulation by cities worldwide, including Helsinki, San Francisco, Cape Town and Sao Paulo (WWF, 2012).

Although launched over a decade ago, Donderdag Veggiedag carries significant importance today for both global and local contexts, with growing awareness of the environmental burden exerted by meat demand, and of the associated risks to human health. **The production of animal proteins uses 83% of the world's farmland while contributing about 58% to global food emissions** (Poore & Nemecek, 2018). The UK Climate Change Committee has advocated a 20% reduction in beef, lamb and dairy consumption per person by 2050 for the UK to achieve net-zero emissions (CCC, 2020). Moreover, UK dietary guidelines such as Public Health England's 'Eatwell Guide' advocate reducing the consumption of red and processed meats, while increasing plant-based foods, to avert adverse health effects (UKHACC, 2020).

Ghent's Coordinated Strategies

Donderdag Veggiedag demonstrates the transformative potential of local governance actors serving as promoters, enablers and partners to co-create sustainability practices. Behind the initiative were extensive efforts to coordinate a city-wide strategy for implementation, across public and private domains. The initiative was directed through a partnership between Ghent municipal authorities and Belgium's largest vegetarian organisation, the Ethical Vegetarian Alternative [EVA], who were contracted by city leaders to provide dedicated information and communication services. The initiative was rolled out subsequently through the expansion of public-private partnerships with anchor institutions such as schools, universities and hospitals, and hospitality venues such as restaurants and hotels (Leenaert, 2011; WWF, 2012).

These partnerships provided a network through which communications about the initiative could be disseminated, **some aimed at garnering mass support, and others tailored to cultivate interest in specific contexts**. For example, broad coverage of Donderdag Veggiedag was provided through: an annual high-profile event; a signature list where all citizens could express their interest; a dedicated website and magazine; and public information posters in the city (WWF, 2012). More tailored efforts included a Little Red Riding Hood initiative for schools (where the wolf ate veggies at least once a week), a Veggie Day package of promotional materials for participating restaurants, and a Veggie Street Map guiding office workers to such venues (Ibid). Opportunities to up-skill workforces in restaurants and sandwich bars were also provided, for example through vegetarian-cooking workshops (Ibid). Following the launch of Donderdag Veggiedag, 120 restaurants offer at least one vegetarian meal on Thursdays (Ettinger, 2018), while others offer fully vegetarian menus (Traynor, 2009). A combination of educational and communication strategies were delivered, which effectively cultivated public interest and translated interest into actions on the ground.

Lessons Learned

The example of Donderdag Veggiedag in Ghent offers a series of lessons for managing city-wide campaigns which tackle food system unsustainability. **Firstly**, it is clear that Ghent's achievements in reducing meat consumption were the result of collaboration across public, private, and third sector organisations. The City's municipal authorities played a vital role in developing and coordinating these relationships, for example by commissioning the Ethical Vegetarian Alternative to lead a public information campaign. It is worth noting, moreover, that Ghent's city council was under the control of a Liberal – Labour coalition at the time of Donderdag Veggiedag's implementation, a fact judged to have positively shaped the initiative's success (Morris et al., 2014). This illustrates the relevance of political circumstances for the deployment of certain sustainability initiatives. An evidence base indicates that attempts to reduce meat consumption are more likely to be supported by the political left, centre or green (Ibid).

Secondly, the consolidation of relationships in Ghent across sectors enabled innovations to be deployed at multiple sites and in a range of forms. Change on the ground, therefore, resulted from a diversity of strategies tailored to specific urban contexts. For example, hospitality workforces were upskilled to improve public provision of vegetarian meals, and public information efforts were adapted for schools (e.g. children's stories) and offices (e.g. Veggie Street Map) to encourage participation. **This demonstrates that cross-sectoral engagement can result from sectoral-specific interventions, in addition to broader public awareness initiatives**. These interventions, moreover, demonstrate that the governance style adopted by the city authorities did not lead to micro-management of the initiative. Donderdag Veggiedag was enabled to develop a momentum of its own as collaborations increased across public, private, and third sector domains.

Thirdly, the example of Ghent shows that a city's association with good practice in the pursuit of sustainability goals results in positive media representation and reputational enhancements, both locally and at the international level. Ghent's meat-free initiative has been copied worldwide, and has attracted significant media attention, for example with *The Telegraph* (2009) and *The Guardian* (Traynor, 2009) reporting on the opening of the campaign. Such publicity can result particularly from claims of first-mover advantages, with the local city council presenting Ghent's campaign as the first in Europe to make an entire locality vegetarian for one day per week (Traynor, 2009).

Fourthly, having recognised its successes, one must recognise that Donderdag Veggiedag is not the only public campaign for reducing meat consumption. In the UK for example, a Meat Free Monday campaign (MFM) was launched in 2009, led by Paul, Mary and Stella McCartney, which has since evolved into a thriving global initiative. While MFM performs a vital role in publicising the key problem area of meat consumption to a global audience, it is different in form to a concerted city-based campaign that is tailored directly to the unique context of a particular municipality. The example of Ghent is valuable for demonstrating the intricate series of relationships and activities among public, private, and third sector actors that can galvanise a particular urban population towards a common goal. It serves as a point of reflection for *how* meat free initiatives can be directed and mobilised to better fulfil their potential. Although Manchester subscribes to the Meat Free Monday initiative, there is

scope for greater creativity and coordination with regards to how this is both publicised and deployed on the ground. Engagement with MFM should not be framed simply as a matter of consumer choice, for the example of Ghent demonstrates that consumer decision-making can be shaped extensively by the coordinated efforts of leading public, private, and third sector actors.

Case Study 4: barePack

Creating a circular economy for plastics in the food system

Overview

Plastics play an important role in food transportation, preservation, hygiene, safety and increasing the lifespan of foods (Yates et al., 2019). Yet there is increasing societal awareness of the negative effects that plastics have on the natural environment. 300 million tonnes of plastic waste are generated globally each year, of which a large proportion consists of single use plastic (Vilella, 2020). The food sector is a substantial contributor to plastic waste: in the UK, 10 supermarket chains account for over 810,000 tonnes of single use plastic placed on the market each year (EIA & Greenpeace, 2018). While a growing number of collaborative initiatives seek to reduce reliance on single use plastic, **there remains a need for the widespread adoption of alternative products and business models across food supply chains**. The following case study focuses on a Singaporean startup – 'barePack' – that attempts to reduce the food service industry's reliance on single use plastic. This case study draws from research conducted at the Alliance Manchester Business School exploring sustainable business models for plastic waste reduction (see Vilella, 2020).

Source: SethLui, 2020

barePack: reusable containers for the food service industry

barePack is a sustainable food startup launched in 2020, in Singapore, that offers premium reusable containers for the food service industry. These containers are suited particularly to food takeaway and delivery contexts: customers receive the food they ordered in barePack containers, and then return the containers to the vendor, or to a designated drop-off point, or arrange a home collection. Subsequently, the containers are cleaned, sanitised and returned to the supply chain, after which they can be re-used to serve over 500 meals (barePack, 2021a; 2021b). barePack therefore creates a "closed-loop" system for consumer packaging characteristic of a "circular economy". At the time of writing, barePack has over 150 retail and commercial partners and 5000 "barePackers", meaning customers that are using the containers to receive their food (barePack, 2021a).

An innovative feature of barePack's business model is that it functions both as a provider of a physical product (the containers), and as a digital platform. barePack's digital platform matches consumers to local food outlets that are using the containers. For example, barePack's mobile app presents a "map view" of participating food outlets to guide customers' food purchases (barePack, 2021b). Moreover, online food delivery platforms such as **Deliveroo, GrabFood** and **FoodPanda** in Singapore have integrated with barePack's service. This means that food vendors and consumers who are subscribed to a delivery platform *and* to barePack have the option to deliver / receive food in the reusable containers (Vilella, 2020; barePack, 2021b). It is through integration with external organisations – and their digital platforms – that barePack can scale its business model.

Lessons from barePack

barePack is an example of a sustainable startup whose value proposition combines low technology (food containers) and high technology (a digital platform capable of cross-platform integration). This enables barePack to stimulate change by different actors at different stages in the food supply chain. Both food vendors and online delivery platforms that partner with barePack gain new value propositions. Participating food vendors become distributors, collectors and cleaners of barePack containers, and delivery platforms like Deliveroo become matchmaking spaces where barePack users identify each other and conduct transactions. Therefore the combination of physical product and digital service offerings enables barePack to transform existing B2C practices for food provisioning. **This combination could be a key consideration in the design thinking of future sustainable food startups.** The case also demonstrates that innovation by firms in the food sector does not need to be based on new or emerging technologies to be transformative. New combinations of existing material infrastructures and new relationships between actors can also offer potential for meaningful change.

Case Study 5: School Meals in Finland

Demonstrating Innovation in Public Sector Food Provision

Overview

The size and scope of public sector food provision provides significant potential for stimulating transformations within the food system. In many schools, children in the UK are fed by the public food catering system every day, whilst thousands of patients rely on hospital catering for their sustenance. The potential of public sector catering extends from the fact that it is one of the few areas of the food system under the direct control of public sector interests. School canteens, hospital wards, prisons and public sector worker canteens are arenas where public interest can counterbalance conflicting messages promoted by the food industry rooted in commercial gain. **Supporting the development of catering services that promote pro-health and pro-sustainable behaviours could be a major public health initiative**, supporting the transformation demand in the longer term. Moreover, they can be a focus for demand driven measures and strategic sourcing policies that support pro-environmental behaviour, for example through support expressed for sustainable food SMEs and domestic food producers.

Finland's School Meal Initiatives

The positive health and sustainability outcomes that can result from public sector catering are visible internationally, for example by the case of school meals in Finland. Finland has been highlighted within sustainability networks as an example of successful food provisioning strategies within the educational sector (e.g. Pellikka et al., 2019). Finland has offered free school meals to all children since 1948. Food provisioning for schools is guided by national nutrition recommendations, and responsibility for meal organisation and delivery lies with cities, municipal authorities, and the schools themselves, who determine how best to integrate national guidelines. **Since 2014, sustainability considerations have been integrated into the national nutrition guidelines, focusing particularly on increasing the provision of plant-based foods.** From 2017, updated recommendations stated that an option of free vegetarian food should be offered to all students on a daily basis, and this has been supported and fostered actively through political decision making in local city councils (Morris & Kaljonen, 2019). Moreover, efforts made towards healthy meal provisioning are seen as important parts of the educational experience, instilling good nutritional and consumption habits. According to a review of Finnish education conducted in collaboration with the UN World Food Programme,

> '**School feeding supports growth and healthy weight development, it promotes healthy meal schedules and learning, and develops food competence and food sense. School feeding is an integrated part of the pedagogical structure of a school day' (Pellikka et al., 2019: p.13).**

Lessons Learned

Of course, the Finnish political context is different to that of the UK, making it unreasonable to expect a direct implementation of such arrangements in our local context. Some of the arrangements for school meal provisioning in Finland, however, are found in similar form in the UK. For example, national nutrition recommendations are set by the UK Government's Department for Education, in the form of the *School food standards practical guide.* The aim of this guide is to 'help children develop healthy eating habits, and ensure that they have the energy and nutrition they need to get the most from their whole school day' (DfE, 2021). Also, daily vegetarian options are a standard for UK public school meals. **Where the UK and Manchester can learn from Finland is in the degree of emphasis placed on sustainable provisioning.** Currently, the UK's school food guide recommends buying seasonal and local food, and purchasing fish from sustainable sources, to support environmental concerns (DfE, 2021). While these are sound recommendations, they do not represent a concerted effort to integrate sustainability priorities into the national nutrition guidelines.

The example of Finland shows that the deployment of a more ambitious sustainable procurement strategy can be achieved through collaboration around a shared mission. The Finnish example is premised on interactions between national scientific bodies, different municipal authorities and schools to coordinate and implement healthy and sustainable meals. As described by Finnish officials,

> **'The Finnish school feeding system is a joint responsibility, steered nationally while implemented locally by municipal education authorities. It is a shared investment in the future of the individual pupil and in the future of the society' (Pellikka et al., 2019: p.iii).**

Such cooperation constitutes the essence of mission-led innovation strategy, where the organisation of sectors and actors around a common challenge is prioritised over hierarchical managerial structures. At another point in their review, Finnish officials state that, 'Horizontal cooperation is a key characteristic in the institutional arrangements of Finnish school feeding. There is no single institution in charge of the system, but it is governed in cooperation' (p.13). This reflects an underlying principle of mission-led innovation, which discourages participating actors from ongoing and direct management at the level of individual organisations. This can be cumbersome, resource intensive, and inhibiting for innovative problem solving. **The Finnish example demonstrates that horizontal relationships united around a common cause can constitute an effective governance structure for sustainable innovation**.

Case Study 6: GC Business Growth Hub

Holistic Support for Sustainable Food Startups and SMEs

Overview

The GC Business Growth Hub ('BGH') is a community of specialists that supports businesses across Greater Manchester at all stages of their growth journey. Most of this support is funded externally from a range of sources, and is provided at **no direct cost to local businesses** (BGH, 2021a). BGH's support services are offered on a one-to-one and peer-to-peer basis, and are grouped into 14 categories, including Access to Finance, Business Strategy, Leadership & Mentoring, and Starting a Business, among others (BGH, 2021b). These services can be tailored towards specific industry groups, including 'Green Technology and Services' (BGH, 2021c), for which BGH organise a "Low Carbon Network" to build relationships, increase awareness of commercial opportunities oriented around sustainability, and disseminate information about regulatory changes (BGH, 2021d). Taken together, the Growth Hub can be said to offer holistic support for Greater Manchester's business community.

Tailored Support for SMEs

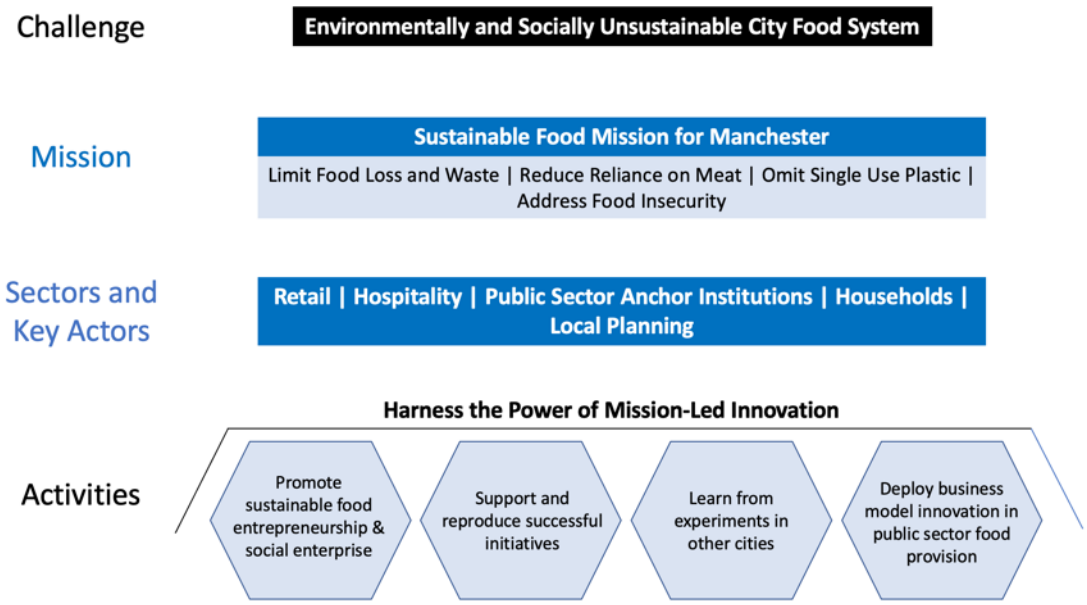
In addition to breadth of services, BGH can offer depth of support for SMEs in the GM region. Subject to basic eligibility checks, the **Starting a Business** service is provided to new ventures at no direct cost, and it consists of four key features: **expert advice**; **masterclasses**; **workshops**; and **networking events**; all of which are designed to support entrepreneurs with the strategic and operational priorities for launching a business (BGH, 2021e). In particular, this includes helping entrepreneurs to build credible applications for accessing financial support, for example through business planning, financial modelling, and pitch deck development. Furthermore, existing ventures looking to scale-up their current value propositions can access services such as **Skills for Growth – SME Support**, which is delivered in partnership with the Greater Manchester Chamber of Commerce. This focuses on up-skilling teams to enhance productivity, performance, and improve talent development (BGH, 2021f). In most cases, such services are offered to SMEs regardless of their specific industry, making sustainable food SMEs eligible for BGH's expert input.

Recipe4Success Programme

New food and drink SMEs in Greater Manchester, moreover, may be eligible for highly specialised support through BGH's Recipe4Success Programme. This is a tailored programme for pre-start and early-stage food producers looking to scale-up their operations, including hospitality venues aiming to commercialise their own products. Through specific workshops and networking events, participants receive bespoke insights into areas such as: sustainable growth and resilience planning, the regulatory environment for food safety, and commercial branding, with certain sessions co-facilitated with leading professional services firms such as Ernst & Young. Towards the conclusion of the programme, participants will be able to consolidate their learning in the form of a business pitch to industry experts and to a dedicated panel of buyers (BGH, 2021g). Data up to July 2018 highlights the advantages of Recipe4Success, with enrolment in the programme contributing towards 85 new jobs in the region, £10m in additional sales, and several Angel investments secured, among other successes (IE, 2022). Sustainable food entrepreneurs can utilise this programme to support the establishment of viable and robust business models for their ventures, benefiting from local expertise and knowledge-sharing opportunities.

Recommendations

The case studies presented demonstrate different ways in which change is emerging in food provisioning systems. Together they highlight a series of insights about food system transformation, and how innovation can be driven on the ground. The following reflections and recommendations aim to contribute to the evidence base for how to incorporate the drive for more sustainable and equitable food provision into Manchester's sustainability and Net Zero agenda, through the domains of activity highlighted in the Sustainable Food Mission.



1. Support sustainable food entrepreneurship in all its forms

Entrepreneurship is pivotal for the introduction of new products, services and business models into society. It has the potential to disrupt established practices, and shape societal behaviour by offering alternative modes of provision and consumption. Sustainable food entrepreneurship can play an important role in transforming food provision in Greater Manchester, and should be supported in all its forms. **This includes** start-up ventures, non-profit organisations, and firms or public sector institutions practising "intrapreneurship" or "corporate entrepreneurship" (Tidd & Bessant, 2018). These terms refer to the deployment of entrepreneurial techniques by organisations with an established market presence and corporate history, in order to launch new innovations.

Successful entrepreneurship depends on forming new combinations of ideas, people, and technologies, and managing these strategically from ideation through to implementation. **Sustainable entrepreneurship**, moreover, involves implementing ideas that have the potential to create substantial value for climate and society in addition to commercial value (Ibid). In the case of food, this can involve **encouraging new consumer markets**, where:

- Food and drink products embody a significantly reduced environmental impact, with a view to offsetting the consumption of traditional, higher impact products;
- Digital platforms encourage sustainable practices, such as the sharing of produce between users to prevent wastage (e.g. **OLIO**);

- Novel modes of provisioning are introduced, such as **mobile food markets**, which increase access to affordable healthy foods across communities.

Despite the challenges presented by the COVID-19 pandemic, the present moment can be understood as opportune for the formation of new sustainable food ventures. First, this is because of increasing demand for sustainable food and drink options. McKinsey & Company (2020: p.3) have observed that: **'Increased visibility and consumer demand for sustainable and perceived-healthier food is one of the most consistent long-term food trends'**, with 25% of consumers having made changes to their diet over the past three years to align to priorities around wellness and sustainability. More broadly, the global market for sustainable and ethical food labels is expected to increase at a compound annual growth rate of over 7% between 2019-2025 (Cision, 2020). **Growing interest in food-tech startups from investors** will provide additional support for growth: in 2020, total investment in food technology companies in Europe was estimated at 2.4 billion Euros, up from 1.3 billion in 2018 (Lock, 2021).

2. Address food insecurity by improving access to sustainable food

Estimates from a 2019 study using representative data reported that 14.2% of the UK adult population experienced some degree of food insecurity in the previous 12 months, while 3.0% reported severe food insecurity (Pool & Dooris, 2021). The COVID-19 crisis exacerbated the situation, with estimates suggesting that in April 2020 around 3 million people lived in households where someone had to skip some meals (Loopstra, 2020). In addition, the recent removal of the universal credit £20 uplift severely impacted thousands of families in the region.

Today several types of charitable food providers are active throughout the country. In Greater Manchester there are currently 261 food support providers across 10 councils (GMPA, 2021). During the first months of the COVID-19 crisis their role was fundamental to the coordination of the emergency response with local authorities to reach people that were shielding or without the economic means to purchase food (Power et al., 2020; Barker and Russell, 2020; Oncini, 2021).

Despite being driven by the same desire to provide relief from poverty, food charities adopt different organizational forms and action strategies. The Greater Manchester Poverty Action charity distinguishes between three different types of actors (GMPA, 2021):

1. Food banks (e.g. Trussell Trust; Independent Food Aid Network)
2. Food pantries, community grocers, and community clubs (e.g. Your Local Pantry; Cracking Good Food; The Bread and Butter Thing)
3. Free and warm meal providers (e.g. FoodCycle; Feed My City).

In general terms, food banks usually rely on food donations from private actors or companies to provide users with free food parcels; Food pantries, community grocers and community clubs most often rely on food surplus, and allow members to purchase food at a much lower cost or in exchange for a weekly fee; finally, warm meal providers (e.g. soup kitchens and soup vans) distribute free cooked meals.

Rather than creating inefficiencies, as might be assumed in conventional managerial perspectives, the diversity of approaches should be considered as a resource – enabling the adaptation of solutions to changing local contexts and needs within a larger city area. At the same time, it should be underlined that the number of food charities increased as a consequence of the austerity measures taken in the aftermath of the Financial Crisis (e.g. Loopstra et al. 2016; Reeves & Loopstra 2020), and that it is now generally agreed that welfare assistance and cash first approaches are the most effective means to counter food insecurity. Therefore, at the national level, more generous government transfers, more stringent employment protection legislation, and the adoption of real living wages should be seen as necessary conditions to improve food insecurity which is almost always a facet of deep economic poverty.

In addition to economic resources, lack of physical proximity to places where sustainable food can be accessed, can compound food insecurity. The introduction of mobile food vendors to reach communities without easy access to healthy and nutritious food (e.g. those living in food deserts), could form part of the solution to this aspect of the problem. Mobile food vendors could be coordinated by a network of food charities already active in the region, and potentially become part of the Food Security Action Network that was recently launched by the GM mayor. In fact, existing food support providers have expertise in food management, and some of them already have a transport fleet in-house (e.g. The Bread and Butter Thing).

The network could rely on existing provision channels to obtain food surplus. In addition, a charity consortium could leverage collective buying power so as to reduce the food costs for both the mobile food vendor and for the other food support initiatives. By doing so, the mobile food vendor could become an opportunity to engage with individuals and families that are not currently accounted for by existing forms of food support while offering an additional source of sustainable food provision. In fact, research has shown that not all people living in food insecurity are willing to rely on charitable providers (Loopstra and Tarasuk 2015). Indeed, many people will restrain their food intake or cut back on other essentials to avoid asking for food from charities. This is not surprising, as there is evidence suggesting that receiving food support comes with feelings of embarrassment and shame and that people may remain reliant on cyclic emergency food supplies (e.g. Purdam et al, 2016; Garthwaite, 2016; Moraes et al., 2021). Mobile food vendors could hence represent an alternative form of provision capable of keeping together environmental and social sustainability. On the one side, it would offer easy and affordable access to healthy and green options in places characterised by restricted food choice (MCC & STC, 2020); on the other side, differently from existing options, it would operate as a de facto market open to anyone, potentially avoiding the stigma that comes with food support initiatives.

3. **Acknowledge that the failures of previous sustainable food initiatives can be attributed to the way they were implemented, rather than to the concepts themselves**

Some of the initiatives recommended in this report have been attempted before in the Greater Manchester region. For example, the concept of a mobile food market has been trialled on more than one occasion, but not in a form that was commercially sustainable in the longer term. This does not necessarily represent the failure of a concept, but rather the absence of a viable strategy for delivery and implementation. Given that the *People's Grocery Mobile Market* in California served 3500 customers annually, and that mobile food markets operate in fifty US communities, including New York City, the concept clearly carries potential for the sustainable provisioning of food. By exploring the implementation strategies deployed in international markets, and by considering the opportunities offered through Manchester's existing and emerging networks and infrastructures (e.g. see Recommendation 2), one can identify factors that can increase substantially the likelihood of project success in Manchester.

4. **Promote new food businesses to catalyse local economic growth and job creation for a green and just COVID-19 Recovery**

Startup businesses often aim to utilise technology to generate a large scale of operations within a relatively short duration of time. OLIO, for example, has scaled from serving North London to operating in 59 countries within just 6 years. The ability of startups to leverage technology for fast growth means that they are particularly important to local and national economies. **For example, startups are estimated to contribute £196 billion annually to the UK economy** (Phillips, 2019), **part of which results from their role as engines of job creation**. Analysis by *The Financial Times* finds that 'Entrepreneurs who create jobs generate a disproportionately large share of new employment' (Moules, 2021), thereby making them a key factor for the UK's economic recovery to COVID-19 (Ibid). Sustainable food startups can provide social and environmental value in addition to economic benefits, if they address key issues of food unsustainability, thereby increasing the likelihood of achieving a *green and just* COVID-19 Recovery in the years to come.

5. **Continue to resource the Manchester Food Board and Manchester's membership of the Sustainable Food Places network**

Enabling exchange of knowledge and best practice is key for supporting a transition to more sustainable food provision in Manchester. In this context, networks and organisations that facilitate collaboration and dialogue between key stakeholders have a valuable role to play. Within the City, the Manchester Food Board plays a key part in this, bringing together organisations from across the city, sharing best practice and facilitating collaborative action. These activities contribute to the delivery of MFB's Action Plan, which aims to promote sustainable and high-quality food, and address challenges identified as key in Manchester's food system, including climate change, poverty, and obesity. We recommend that MFB continue to be resourced for this important work.

The Manchester Food Board also facilitates relationships with other cities through its membership of the Sustainable Food Places ('SFP') network. SFP is led by three national NGOs: Sustain, the Soil Association and Food Matters. SFP aims to promote innovation and best practice for tackling the social, environmental and economic issues associated with the UK's food system. This is especially by stimulating cross-sectoral engagement across the UK's counties, cities, boroughs, districts, and towns to ensure that the entire food system is examined for instances of unsustainability (SFP 2021a; 2021b; 2021c). The partnership has over 50 members who can apply annually for Bronze, Silver, or Gold Awards in recognition of progress made towards local food sustainability goals (SFP, 2021d; SFP, 2021e). Manchester has been a Bronze Award holder since 2017 (SFP, 2021f). In addition to supporting cross-city collaboration, MFB's membership of SFP opens access to the Sustainable Food Places toolkit, which outlines best practice guidelines for sustainable food governance, with accompanying tools to support delivery of key objectives across a range of problem areas.

6. Adapt novel practices from climate change experiments in other cities for Manchester

Climate change experiments are social tests designed to find substantial opportunities for reducing negative environmental impacts. They can take many forms, for example involving trials of new technologies, and/or novel forms of collaboration (Fuenfschilling et al., 2019). Sustainability research encourages the incorporation of such experiments in urban governance practices, **arguing that local bodies should act as promoters, enablers and partners to co-create local initiatives** (Ibid). Soloviy (2018) identified 627 global climate change experiments between 2005 and 2018, while Broto & Bulkeley (2013) identified climate change experiments in 100 cities, highlighting how 'urban landscapes are littered with examples of actions being taken under the banner of climate change' (Ibid: p.93). The successes of the campaign for meat-free Thursdays ('Donderdag Veggiedag') in Ghent, Belgium highlights the potential for cities to drive meaningful changes in food practices, and earn local and international acclaim in the process.

To develop innovative approaches that support food system transformation, Manchester can adapt experimental initiatives that have yielded positive results elsewhere to our local context. This process of adaptation is important, because the success of climate change experiments is always dependent on the particular contexts in which the experiments were conducted. To "import" the strategies of other cities without due consideration for Manchester's specific institutional and cultural context is to invite failure. Such mistakes can be avoided by taking an entrepreneurial approach to the development of new public initiatives. This could involve the stress-testing of key assumptions in localised pilots, where Manchester citizens across the City's diverse communities participate actively to evaluate the viability of social innovations. Through citizens' feedback, sustainable food initiatives can be tailored to accommodate local sensitivities and address specific needs, thereby increasing their feasibility over the longer term.

7. **Promote innovation through networks and partnerships rather than resource intensive bureaucracies**

The example of meat-free Thursdays in Ghent highlights that the formation of public – private partnerships in support of sustainable food initiatives can take on a momentum of their own, following a strong initial launch. After Ghent's municipal authorities commissioned the Ethical Vegetarian Alternative to lead a communications campaign, a plethora of partnerships developed across schools, universities, hospitals, hospitality venues, NGOs, and local government, in the absence of resource intensive bureaucracies and hierarchical forms of managerial control. This demonstrates that building collaborative networks does not need to be a cumbersome activity, but that networks can develop at pace providing an overarching direction is established and coordinated first by local state actors. This is commensurate with mission-led innovation strategy, which advocates the creation of 'frames and stimuli for innovation' (Mazzucato & Dibb, 2019: p.2) rather than direct management at the level of individual organisations.

8. **Recognise that new initiatives are unlikely to 'scale up' on their own**

Manchester continues to nurture multiple small scale food projects. When initiatives are seen to generate positive outcomes, questions arise about how to expand their reach, involve more people, and deliver even greater results. Not all ventures will successfully 'scale up'. Nevertheless, taking stock of lessons learnt from successful initiatives can support those that do aim to expand, as well as support emerging initiatives, potentially shielding them from common pitfalls. By promoting knowledge exchange and facilitating collaboration across Manchester's diverse stakeholder networks, the aim is to develop, catalyse and reproduce initiatives in a manner that is both commercially and environmentally sustainable. This emphasis on collaboration is vital for promoting business creation and expansion during Manchester's COVID-19 Recovery, so that the burden of commercial development does not rest on a single set of actors. Institutions in Manchester such as the **GC Business Growth Hub** can leverage an array of networks to support entrepreneurial activity, opening opportunities for financial and strategic input to give new ventures the best chance of success.

9. **Recognise that well managed public – private relationships can increase the likelihood of success for new ventures**

The example of mobile food markets called Green Carts in New York City demonstrates that **public-private partnerships can be important for developing and sustaining new markets**, through the cultivation of both supply and demand. Through policy instruments such as legislation and financial subsidies, the New York City Council catalysed the deployment of 477 Green Carts across the city, thereby stimulating supply through new market creation. Additional funding for public – private collaborative initiatives enabled community organisations to partner with Green Carts and stimulate customer interest for produce, **thereby aligning supply with demand**. The case of Green Carts, therefore, highlights how dedicated strategies which catalyse both market creation and public demand for that market may be required for sustainable food initiatives to launch and scale up. Strategies to harness public – private participation enable skills, expertise and resources

to be shared within and across communities, giving new ventures a greater chance of success.

10. Support the development of catering systems that prioritise health and sustainability over profitmaking

Public food provisioning, through schools, hospitals, prisons and staff catering, has the potential not only to provide healthy and nutritious food to residents in the region but also to steer businesses to more sustainable and socially beneficial practices. Nowhere is this potential greater than in the school meals service. Manchester City Council, however, took the decision recently to discontinue its school meal catering service known as 'Manchester Fayre', which held a Food for Life Bronze Award for sustainable catering. Schools that were reliant upon this service will now be required to make their own arrangements for feeding their pupils. In practice, this largely means contracting private sector providers, usually multinational institutional caterers. A risk with this approach is that such caterers operate on a profitmaking basis, which could compromise the quality of school meals in Manchester if profits are prioritised at the expense of nutritional quality. During the COVID-19 pandemic, private sector caterers have been exposed by social media reporting – elaborated upon by mainstream media outlets – for significant inadequacies in their school meal provision (e.g. *BBC News*, 2021). This lends weight to the argument of campaigners for school food, who are unanimous that the long-term impact of commercialisation will be reductions in quality of school meals. Despite the challenges of operating a public catering service for schools, Manchester Fayre's Food for Life Award, and the examples of the Finnish school meals service (presented in Case Study 5), illustrate the potential of public sector catering as a key part of a sustainable food system.

Supporting the development of public catering systems that promote pro-health and pro-sustainable behaviours could be a major source of innovation as well as being central to the fight against food insecurity, and the creation of local economic value through sourcing from local SMEs and food producers. If the fate of the council catering service cannot be avoided, then support must be given to schools (and other institutions) to work together and develop their own healthy and sustainable food provisioning systems. Forcing public institutions to resort to commercial operators will not be conducive to a sustainable food system, if the profit motive trumps social good. In this respect, schools could serve as a test bed for mission-based food system transformation in Manchester.

Conclusion

Part 2 of this report has examined some responses from the private, public, and third sectors to the key problem areas of the food system. Six case studies of sustainable food innovations have been presented, ranging from high-technology ventures to public campaigns led by local governments. The aim of presenting these case studies is not to suggest their direct replication in Manchester, but to serve as a source of lessons for stimulating food system sustainability. The cases and associated recommendations are designed to provide ideas for Manchester stakeholders on how to best encourage the success of current and future sustainable food initiatives, tailored to the specific dynamics of our local context.

Manchester has a combination of commercial, technological and governance expertise to leverage in support of sustainable food initiatives; the challenge is how to best organise the City's resources. This report has suggested a mission-led innovation strategy as a method of uniting the City's diverse stakeholder groups behind the cause of food system sustainability. By emphasising collaboration between sectors and actors, key problems of the food system can be addressed simultaneously, and the positive impacts of initiatives can be multiplied and augmented. Lastly, the adoption of a mission creates a space where Manchester stakeholders can test new configurations of the food system, in acknowledgement that there is no single answer to the problem areas outlined above. In the words of Mazzucato & Dibb (2019: p.2),

> **'By setting the direction for a solution, missions do not specify how to achieve success. The right answers are not known in advance. Rather, missions stimulate the development of a range of different solutions to meet grand challenges and reward those actors willing to take risks and experiment'.**

While the ongoing COVID-19 pandemic continues to create significant challenges for policymakers, it can also be seen as providing a unique opportunity to pursue novel solutions to major societal challenges. The period of the pandemic has corresponded with rising societal awareness of the effects of climate change. **Concern for the climate among the British public is now at the highest level since records began in 1988**, with a recent Ipsos MORI poll finding that four in ten people rank "climate change, pollution and the environment" as the biggest issue for the UK (Bancroft, 2021). The attention in policymaking circles to a *green recovery* to the pandemic, reiterated at the COP26 Climate Summit in Glasgow, creates further legitimacy for bold actions in the face of climate change.

Now more than ever before, a case exists for immediate and extensive responses to the climate crisis at local levels. But an appropriate response involves prioritising sustainability concerns above private interest, profitmaking, and the perpetuation of unsustainable markets. Rising societal concern for the environment indicates that the public should be identified not simply as consumers, but as informed citizens capable of engaging with changing systems of provision. This shift in language can alter the focus of policymaking from affecting consumer behaviour within conventional markets to creating spaces that encourage new forms of citizen activities. Whether it be OLIO's creation of new B2C and P2P markets to prevent food waste, or Ghent's coordinated pursuit of a city-wide meat free day, the cases presented in this report represent the active cultivation of new forms of social engagement that are environmentally sustainable and beneficial to public interest. Food's

status as a foundational aspect of daily life and the economy makes it a worthy facet of Manchester's evolving climate change response, and a test bed for city-oriented mission-led innovation in pursuit of net-zero by 2038.

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FOOD SYSTEM ANCHORED IN CONSUMER CHOICE
FOOD & DRINK
WASTE FOOD
GOES TO
FOOD BANKS
CARE HOMES
LOCAL CONNECTIONS
TRANSLATE INTO SUSTAINABLE DIETS
MEAT FREE MENUS
COMMUNITY GARDENS
WIDER ECOSYSTEM of FOOD-PRODUCING ORGANISATIONS
INTERVENTION POINTS AROUND
SCHOOL MEALS
SUPERMARKETS
EDUCATION - CO-BENEFITS
HEALTH, NUTRITION, POVERTY
RETAILERS
GROWERS
CONSUMERS
CONNECT