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Every City a Food Growing City? What Food Growing Schools London Reveals about City Strategies for Food System Sustainability

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Abstract: Cities have emerged as leaders in food system innovation and transformation, but their potential can be limited by the absence of supportive governance arrangements. This study examined the value of Food Growing Schools London (FGSL) as a programme seeking city-wide change through focusing on one dimension of the food system. Mixed methods case study research sought to identify high-level success factors and challenges. Findings demonstrate FGSL's success in promoting food growing by connecting and amplifying formerly isolated activities. Schools valued the programme's expertise and networking opportunities, whilst strategic engagement facilitated new partnerships linking food growing to other policy priorities. Challenges included food growing's marginality amongst priorities that direct school and borough activity. Progress depended on support from individual local actors so varied across the city. London-wide progress was limited by the absence of policy levers at the city level. Experience from FGSL highlights how city food strategies remain constrained by national policy contexts, but suggests they may gain traction through focusing on well-delineated, straightforward activities that hold public appeal. Sustainability outcomes might then be extended through a staged approach using this as a platform from which to address other food issues.

Keywords: urban food; city strategies; sustainability transitions; school food; London

1. Introduction

Writing about what they term the 'new food equation' Morgan and Sonnino argued that cities are at the sharp end of food related problems and spearheading responses [1]. Cities have emerged as leaders in progressing food system innovation and transformation [2], having freedom to innovate and experiment [3,4]. However, cities' potential can be limited by the absence of supportive governance arrangements [1], whilst the breadth and complexity of issues encompassed within urban food strategies may result in lack of focus [3,5]. This paper considers how these potential limitations effect a city's progress, through examining one strategy seeking to overcome them: focusing on a single dimension of food system sustainability and progressing it through co-ordinated activity across a city. It focuses on the case of Food Growing Schools London (FGSL), a programme attempting such an approach by promoting school food growing, whilst working within the context of a broader food strategy. This paper reveals what factors allow such programmes to change city food systems, and their potential to drive transformation towards sustainability. Focusing on London, a city previously

identified as an early leader in urban food innovations [1], allows us to consider whether limitations encountered almost a decade ago have been addressed. Beyond lessons for programmes targeting school food growing, this contributes learning relevant to the role and potential of city strategies for transformation. Although our focus is food, cities are seen to have a transformative capacity to drive sustainability across socio-ecological systems [6], suggesting lessons regarding the potential to achieve change through single issue city-wide programmes.

The context for the case-study is the rise of urban food strategies as a key mechanism to drive change [2,3]. Their power lies in a holistic view on the food system, guiding integrated action towards sustainability outcomes [5]. Typically led by multi-stakeholder forums, such as food policy councils [4], they engage the broad range of actors required to progress change [6]. Having assessed urban food strategies from the UK and North America, Sonnino concludes that they have created connections between actors and policy areas, embedding food issues across multiple sectors [2]. However, this approach faces three significant challenges. Firstly, a holistic approach to the food system addresses a breadth of policy areas which can create tensions and result in multiple competing priorities [3]. This may make food strategies too complex and unwieldy to deliver or drive change [5]. Second is the lack of political priority placed on food, resulting in under-investment and lack of support to implement innovation [1,7]. Leadership by civil society organisations suggest food strategies as cases of neoliberal rollback of state responsibility [5]. This is intensified by ongoing fiscal constraints limiting local governments' ability to invest or participate in food related activity [8]. A third challenge is the lack of governance structures which allow city-wide actors to ensure implementation [1]. In London the city Mayor's expressed support for food sustainability is not matched by powers to deliver change [9]. City authorities often lack control over policy areas covered by food strategies, making progress reliant on local or national governments [1,2]. New governance spaces shaped around urban food strategies risk over-reliance on champions, making them unsustainable or excluding more marginal stakeholders [10]. These challenges highlight that the potential of city strategies for food system transformation remains uncertain, hence the importance of evaluating attempts to progress food sustainability through city-wide activity.

Food system sustainability lacks a single agreed definition, but there is some consistency in the conceptualisation applied in urban food strategies. They adopt broad, flexible visions of food sustainability which deliberately reach beyond narrowly-defined localism [2,11], and the trap of territorially-defined sourcing [12]. They recognise the complexity of food systems, not focusing solely on production or consumption and addressing wide ranging challenges beyond basic food security [1]. In the UK these goals are embodied in the Sustainable Food Cities Network (SFC), which supports towns and cities to develop a cross-sector partnership cooperating to embed healthy, sustainable food in local policies. SFC's approach, as adopted by numerous UK cities, identifies focus areas for working towards multi-dimensional food system sustainability. The new London Food Strategy—the context of our case study—applies these in a vision for six dimensions of good food organised around: health, fairness and accessibility, profitability, planet friendly, humane and sustainable production, and celebration [13]. The last of these refers to cultural and educational aspects, conveying the wish for city people to understand and engage in the nature of good food through their shopping, eating, and growing. It is this dimension of food sustainability which was the priority goal for FGSL, to be achieved through increased engagement in food growing.

Many city food strategies in developed countries include action to expand urban food growing [5,14]. Schools have featured prominently because of their role in education, public investment in changing food cultures [15]. A wealth of research suggests multiple benefits of involving children and young people in growing food as part of formal education [16,17]. There is evidence of positive impacts on pupil nutrition, including increased preference for and consumption of fruit and vegetables, and suggestions of wider wellbeing benefits [16]. Sustainability outcomes of school gardening are difficult to demonstrate and have rarely been systematically measured [18]. Practitioners promote multiple benefits for individuals and communities which overlap with cities' food sustainability

ambitions, as highlighted from the case study. Where school food growing has most direct potential for transformational change is in shaping how future generations understand and engage with the food system [19]. Whilst a significant body of research considers delivery and impact at the individual school level, little is known about the potential to create synergies and enhance outcomes through multi-school programmes acting at strategic scales. This paper examines one such approach, exploring the value of a city-wide strategy to promote school food growing, and whether additional value is achieved through concerted support at this level.

This research focuses on Food Growing Schools London (FGSL), a programme established in 2013 in the UK capital. Its goal is:

“For every school in London to be a food growing school, and strengthen and build upon existing activity to support all schools in London to fully embed food growing into school life.”

FGSL aims to demonstrate how every school and its community can benefit from food growing, supporting school leaders, staff and volunteers to develop appropriate skills and confidence. Mindful of avoiding replication with a range of other initiatives related to school food growing, FGSL sought to draw together and capitalise on existing networks and expertise. FGSL was led by the charity Garden Organic and supported by charitable funding from the Big Lottery Fund, with support of the Mayor of London. The initial grant of £800,000 supported a three-year period (2013–2017), later extended for one year following receipt of an anonymous donation. FGSL became established as a team of six part- and full-time officers, with the support of partners from Sustain, the Food for Life Partnership, The Royal Horticultural Society, School Food Matters, and the Greater London Authority.

The programme drew inspiration from a similar city-wide initiative in New York, a public-private partnership between Grow NYC, the Mayor’s Fund to Advance New York City, and several government agency partners, operating since 2010. Other US cities have since adopted this approach, as have similar programmes with a state-wide remit. In Australia similar goals are promoted by the Stephanie Alexander Kitchen Garden Foundation. The UK context for the establishment of FGSL included work undertaken by the Food Growing in Schools Task Force [20] that set an agenda for fully embedding food growing across school curricula. This established an evidence-base supported by government, for the value of greater school activity around food growing, and recommended how it could be supported. Key was the suggestion that a range of stakeholders—volunteers, businesses, local communities, the voluntary sector, and schools had a role to play, but needed to be coordinated and connected. In London specifically, FGSL built on the foundation of Capital Growth, a network to encourage food growing across the city supported by the Greater London Authority (GLA) since 2008. In 2015 the GLA also sponsored Flagship Food Boroughs of Lambeth and Croydon to step-up implementation of activities showcasing a whole-environment approach to food, and to develop learning for other boroughs.

FGSL operates within the context of London’s over-arching goals for food sustainability as set out in a holistic strategy, led by a food board reporting to the city Mayor. This model is adopted by many city’s around the world and is known to face multiple challenges [2,3]. FGSL, therefore, presents a valuable case study of a city-wide programme focused on one area of food activity—food growing education—working within and contributing to a comprehensive food strategy. It also presents an opportunity to consider whether challenges encountered in the early stages of London’s urban food innovation [1,2,9] have been overcome. We present FGSL as an example of a programme seeking change at a city-wide scale through focusing on one dimension of the food system, working within the context of an over-arching city food strategy. The programme promotes multiple benefits of school food growing in relation to health, education, community, environment, and economy [20], contributing across the dimensions of food system sustainability highlighted in London’s vision. FGSL’s core outcomes most directly contribute to the city’s goals for Londoners to celebrate good food by targeting change in food education and cultures (Box 1). In the long-term this was envisaged to contribute to a culture of food growing across the city, supported by varied local actors. These outcomes were to be met

through diverse activities coordinated by a small team of specialist staff (Box 2). Schools engaging with any of these activities were asked to complete an online survey, allowing the programme to capture data on participation in food growing. The programme was open to schools of all kind and educational stages—pre-school to high school, and those for pupils with special educational needs and disabilities. In addition to online resources and partnership brokering, FGSL had a small team of specialist engagement officers who liaised with borough level organisations and some individual schools.

Box 1. FGSL programme outcomes.

- (1) Through involvement in food growing activities at school, children and young people will have gained life skills, knowledge, and confidence in food growing.
- (2) Children and young people in London have an increased awareness of wider benefits of food growing, connection to natural environment, healthy eating, waste and recycling, and the actions they can take to achieve enhanced benefits.
- (3) There will be improved links between London schools and their diverse local communities, including voluntary organisations and local businesses.
- (4) The community around schools involved in the project, including parents, businesses, and voluntary organisations, will develop: improved relationships with their local school, an enhanced environment and increased skills and experience.

Box 2. FGSL key delivery mechanisms.

- (1) A web portal offering resources for schools to support their growing activities, including lesson plans and gardening advice.
- (2) Training sessions for school staff and volunteers, tailored for specific areas and needs.
- (3) Developing a *Directory of London School Food Growing Organisations* signposting and matchmaking schools to support available.
- (4) The *Growathon*—a call for all schools to record how many pupils have been involved in food growing with online tracking of the target of 50,000 pupils in one academic year.
- (5) Establishing borough level networks focused on school food growing, and city-wide partnerships with relevant organisations.
- (6) Communication activity including promotion involving public figures and businesses, and a high-level presentation of the programme and its achievements at the end of the funded period.
- (7) Embedding food growing into city-wide and borough strategies, including the annual *Good Food for London Report*.
- (8) Competitions and other focused activities promoting time or issue specific engagement, e.g., *Heritage Seed Library Guardians* a scheme to preserve and promote traditional varieties of fruit and vegetables.
- (9) Stakeholder network events to bring schools together with range of national, city-wide and borough level agencies with expertise linked to food growing, including a high-profile market held annually at city hall, enabling schools to showcase their achievements and sell produce.

2. Methods

This study adopted methods appropriate to case study research on a programme oriented to strategic change [21]. In the initial stage of the research, we asked leads from the staff delivery team to develop a programme logic model [22] setting out how activity components and processes were intended to lead to impacts. We supported staff to identify overarching accounts—or theories of change—to explain how and why programme elements might create effects [23]. Building upon this information, we identified aspects of the programme on which to direct our enquiry which covered the initial three year funded period.

We used a combination of data sources including interviews, surveys of participating schools and training participants, programme records, and event observations. Potential interviewees were selected on the basis of their insight and perspective on leading aspects of the programme. The aim

was to include representatives of each type of stakeholder involved in the programme: strategic management team, delivery team, beneficiaries (school staff), and local borough partners. In addition the perspective of policy makers working on relevant city wide strategies were targeted. Overall, we conducted 117 interviews with 75 individuals. Of these, seven were members of FGSL staff, 42 were teaching and educational support staff in schools, and 32 were wider stakeholders—staff in local government, non-government organisations, private sector business, and community volunteers.

The interviews spanned the duration of the three-year programme (2013–2017), and varied in length from 15 min to 1 h. They took place either in-person or by phone. In person interviews were conducted at the interviewee's place of work, at networking and training events organized by FGSL (e.g., at schools, at the City Hall) or at other mutually agreed public places. To elicit a depth of responses [24], we used semi-structured interview guides that covered descriptive characteristics of the topic, the wider context, perceptions of impacts, barriers to change, explanations of impacts, and additional questions specific to the topic. The interview guides were first piloted and then iteratively revised in light of insights arising over the course of the fieldwork. With permission, interviews were audio-recorded and selectively transcribed. For longer and more in-depth interviews, we provided interviewees the opportunity to review and amend the transcript. The transcripts were reviewed and initially annotated to identify both a priori themes from the interview guide and emergent themes arising from the accounts of interviewees. The themes were first organised into lower-order descriptive categories, then reviewed by the whole research team to identify higher order explanatory themes on processes facilitating or inhibiting change [24]. Alongside manual coding, NVivo 11, a data analysis software programme (QSR International, Melbourne Australia), was used to facilitate data management. Relevant interview excerpts are included here to illustrate the themes emerging from data analysis, and to provide direct insight to stakeholder perspectives. Ethical approval for the study was obtained from the lead university research ethics committee (application number: HAS/14/05/79).

3. Results

3.1. Programme Outputs, Perceived Outcomes, and Benefits

In order to contextualise the value of FGSL as a city strategy for changing food sustainability it is necessary to summarise leading outputs and outcomes. Over the initial three-year period, 1411 teachers, teaching assistants, community members, and wider stakeholders attended FGSL training, networking, and outreach events. FGSL recorded contacts with 989 schools, representing 31.6% of all London schools across all boroughs in the city. Of these 298 provided baseline and follow-up responses on change over an average period of 20 months. At both stages a majority of responding schools were primaries, with less than 20% being secondary schools. There was an overall increase in the percentage of schools reporting any form of food growing activity, from 73% to 88%. The percentage of primary schools growing food rose from 74% to 89% at follow up; for secondary schools the change was from 67% to 87%. This change was associated with increases in the extent of pupil, parental and wider community involvement, links across the curriculum, school ethos and culture, and pupil engagement in wider issues of healthy eating and sustainability ($p < 0.05$ for all measures). Perceived positive outcomes for pupils included enhanced skills and confidence in food growing (reported by 92.7% respondent schools). A majority of schools (78.9%) suggested pupils became more aware of the wider benefits of food growing e.g., to the environment, whilst 44.4% reported they had increased their daily intake of fruit and vegetables. Overall, 37% of schools attributed 'some' or a 'great deal' of these impacts to the support they had obtained through FGSL. Respondents identified continued barriers which made it difficult for some schools to begin or expand food growing activity, the most prominent of which were competing curriculum pressures, and lack of staff skills or interest.

Feedback from schools demonstrated that FGSL had been influential in their progress, and had provided a valuable resource, which 'gave them thinking [space], it gave the management ideas'

(Teacher 12). This teacher also highlights the value of ‘support from practitioners’ and that school staff ‘wanted to be trained’ (Teacher 12), highlighting lack of prior horticultural or growing expertise as a key challenge for schools with regards to food growing. These themes also emerge in interviews with stakeholders, with interviewees noting that FGSL filled an expertise gap:

“Their support has worked well for us because they have the food growing expertise and at the end of the day it is an expertise. There are many things that I can encourage schools to do, my background is in teaching, so I can do teacher training and I can support them on the curriculum and I can support them with menus, but actually, I am not an expert in food growing.” (Borough representative 1).

FGSL became a focal point for food growing in London, facilitating partnerships at multiple levels, from city-wide networks, to borough-level teacher networks. Stakeholders noted that the programme’s model of coordinating existing materials and support, acting as an umbrella sign-posting body meant that beneficiaries were not always aware of FGSL’s role. This is probably reflected in the finding that 37% of schools attributed ‘some’ or a ‘great deal’ of the impacts reported to the support they had obtained through FGSL. Despite this stakeholders tended to agree that the benefits of a coordinated approach were clear, making it easier for schools and other organisations to navigate to useful support. The intention has been not to “do the doing because there’s plenty of people out there that are doing that” (Partner agency staff 9). Their niche was to be the links between current activity, to sign-post and connect, which means the direct impact and outcomes are hard to attribute to FGSL, their profile is less obvious. Discussion with stakeholders highlighted that FGSL’s niche was its focus and expertise combining food growing and schools. Its partnership approach was also identified as unique, drawing together skills, experience, and activity from a range of organisations.

3.2. Processes Supporting Change

In this section we present key success factors of the initiative as a city-wide transformation strategy, identified through analysis of stakeholder interviews. These begin to demonstrate the value of a city-wide approach, and highlight ways in which FGSL’s London focus made a difference. Elements which contributed are identified as the establishment of new networks and partnerships, connections to other policy priorities, and the efficiency of concentrated local action.

3.2.1. Networks and Partnerships

Core to FGSL’s approach was connecting groups and initiatives to establish single points of contact for schools, developing synergies between existing activity. Networks were brought together at various levels—the whole city down to the borough level—creating opportunities for stakeholders to interact, coordinate and exchange experiences. By acting as a facilitator and connecting resources, FGSL provided a ‘one-stop-shop’ where schools could gain access to a range of resources. These connections were particularly beneficial when targeting schools which ‘don’t have time to find these things out’ (Borough representative 8) or even to ‘take phone-calls from organisations that are offering them things’ (Borough representative 8). As well as benefiting schools, this role of co-ordinator, facilitating access to a range of organization and resources, was also perceived to benefit stakeholders seeking to work with schools. A borough representative, for example, explained that since she has a broad remit she cannot be aware of all relevant activity or actors and so saw FGSL as the key contact and a conduit to others, which was highly efficient. Further, this role of ‘coordinator’ was identified as a unique way of working:

“I think it was the first time that I have come across in the schools’ gardening world where somebody was actually trying to bring everyone together rather than trying to carve out their own space and say ‘this is our space and we are doing everything that we can possibly do for its schools’. That was the unique approach and that was why all the partners supported it

from the go get, because it was about working together rather than one organisation coming in and pretending that everything that they were doing is new.” (Partner agency staff 2).

In addition to operating a networked approach, FGSL facilitated formation of connections within local areas and between schools, enabling networking between those interested in food growing. School-based actors appreciated opportunities for networking as this helped to cement the feeling that they are not alone, but part of a wider food growing movement. Teachers felt that one of the ‘most effective . . . , the most interesting’ (Teacher 17) aspect of the FGSL programme were the ‘local initiatives, a network of schools’ (Teacher 17) which provided the opportunity to talk with staff from other schools with direct experience of food growing projects as this gave them practical insights that were directly applicable to their own settings as well as offering models of practice they could adapt. Experience from one Borough suggested people within schools who take responsibility for growing are not always core staff or well-integrated into networks which could support them, suggesting that these networks provided a valuable resource. However, in a large city, like London, these networks needed to be established at more local levels. Thus, FGSL linked schools with organisations in their area which was practical for teachers:

“London wide things are quite tricky because of getting time out. For me, to leave school to attend some kind of big London wide forum is not a given that I would be able to do that. A borough wide thing might be easier just because it’s much closer.” (Teacher 6).

Nevertheless, there is a role of city-wide events, which promoted contact between teachers who valued growing activities. As this teacher notes, these links can help establish longer term connections:

“I went to one at City Hall where I met teachers and that was good. To be able to meet other people doing similar work and you know. I think we have since been emailing a little bit as well.” (Teacher 3).

An important mechanism for connecting organisations was the FGSL steering group which regularly brought core partners together. These networking events attracted regular attendance, suggesting they are valued by members, becoming ‘a good space to share and for people to know what’s going on. And all of the partners have kept coming which is a sign that people value that space to work together’ (Partner agency staff 11). This networking created new synergies by connecting organisations who would not otherwise have been in contact, ‘By joining up those dots, you’ve added value to the . . . different programmes [...] To me that’s the sum of the parts has made it greater’ (FGSL team 1). These networks also helped to increase the efficiency of food growing work with schools, by ‘adding value to each other’s work rather than bumping into one another or trying to duplicate work’ (FGSL team 1). Steering group members described FGSL as offering a positive way of working which allowed things to be achieved quickly, for example attracting mass participation in the Growathon by all partners promoting it through their own networks. As a result of linking up through FGSL organisations now understand each other better, and have started working together on new initiatives. Bodies external to the partnership identified its advantages:

“You cannot, as a borough, work with twenty organisations around food growing [. . .] let alone all the other things that are going on.” (Borough representative 10).

In particular, progress had been made by using the borough’s networks and established links to schools to find ways in for the FGSL engagement team: “it’s an ‘in’, and to some extent the boroughs who are really engaged can help coordinate things”. However, several stakeholders noted that such partnerships were not formed across the whole of London, with activity varying between boroughs.

3.2.2. Aligning with Other Priorities

Not all of the networks or partners FGSL connected with have school food growing as their core focus. School growing is not prioritised within the curriculum, and is often not the priority food issue

in this setting meaning it can be necessary to promote it as contributing to allied goals, or to focus on indirect benefits. Stakeholders noted that boroughs have so many priorities to manage, and increasing pressure on resources, so food growing is unlikely to become a higher priority, or receive significant additional support. Within the flagship boroughs issues like breakfast menus and school meal uptake were prioritised, so growing was promoted as contributing to overarching goals: “one around whole school approach to healthy eating and one around sharing what works well.” (Borough representative 8). A prominent example of aligning with other policy goals was linking with the Healthy Schools initiative which is active across London. Food growing can contribute to aims around promoting healthier diets and physical activity, and is specified as one dimension of a healthy school. FGSL capitalised on this to reach and engage schools:

“I think the Healthy Schools one is quite a good case in point because I think the borough leads that they employ in London have got quite limited capacity [. . .] Some Healthy Schools contacts have been really helpful and we’ve done stuff in partnership with them or we’ve been along to their meetings.” (FGSL team 2).

Through such connections it was possible for FGSL to support boroughs in meeting their goals, hence some worked with the programme, sharing access to their networks and links to schools. This approach brought mutual benefits and furthered FGSL’s approach of working through linking organisations and initiatives. These examples demonstrate how food sustainability goals are advanced through aligning with issues more embedded in policy and statutory provision.

3.2.3. Concentrated Local Activity

Although taking a city-wide approach, participation in FGSL was uneven, with varying levels of involvement from the city’s 32 local authorities. The most concentrated action resulted from FGSL coinciding with the 2015 launch of two food flagship boroughs, Croydon and Lambeth. The food lead for Croydon described how making contact with FGSL through the local engagement officer enabled rapid progress in her borough. Prior to flagship status Croydon had done little focused on school food; roughly one in ten schools in the borough had a well-developed and used growing site (7 out of 72 survey respondents). After two years almost 60 schools, of a total of 140, had started some form of new food growing activity. FGSL contributed through establishing a training programme to address a gap in the borough’s provision, with themed sessions, some directly linked to grants available to schools in the area. The borough promoted the training and attracted participants, whilst FGSL planned and delivered the sessions. Participating schools were brought into a ‘swap shop’ system by the FGSL officer, allowing them to exchange materials to help reduce costs and make use of surplus items. Following on from the training the borough established a food growers forum to provide ongoing support, and build on schools’ enthusiasm by maintaining a profile for the issue locally. Initial sessions were supported by FGSL, with the network later convened and supported by the borough meaning it can continue beyond the funded programme.

The intensity of FGSL support in Croydon was only possible because flagship status allowed access to additional financial support. This provided schools with direct support from the FGSL engagement officer, targeted at those which could most benefit from more intensive assistance and with greatest need in relation to child health and inequalities. Participating schools were provided with a survey of their growing area, a plan for the year and advice on engaging staff and parents. The borough also established its own marketplace, following the model established by FGSL for the city-wide event, in recognition that it is difficult for schools in Croydon to get to City Hall. Having flagship status and access to additional funding resulted in a concentration of activity in one borough. In other parts of the city support of a key contact ‘has been really helpful in terms of getting the message out there’ (FGSL team 3). It is at the borough level that schools are governed and coordinated, hence, support from local authorities was significant in influencing the degree of local participation in FGSL. Connecting with local champions helped the programme reach more schools

and have greater profile in certain areas. This demonstrates the role of strong local leadership or food-focused champions in order to drive progress.

3.3. Challenges and Barriers to Change

Although there were clear strengths to FGSL's model and demonstrable achievements as a result, there were limits on what it could achieve as a city-wide programme focused on a single food issue. Stakeholders at all levels identified barriers to achieving the goal of every school growing food.

3.3.1. School Drivers

Food growing features very weakly, if at all, amongst priorities which drive school activity, meaning that it can struggle to gain traction within individual schools. Stakeholders were aware schools are under considerable pressures so struggle to deliver anything beyond core activity, hence, limited capacity to support food growing. Some noted that schools face a barrage of initiatives and opportunities, so often depend on a keen individual taking one up. Teachers and others noted that their priorities are often tied to the school inspection framework, which currently does not lead inspectors (OFSTED) to seek evidence of growing, hence, a lack of incentives for school managers:

“If the OFSTED criteria incorporated learning in an outdoor environment, learning in a natural environment, food growing, like if that was the box that needed to be ticked as good or outstanding, then they would find a way to tick it because they tick the other boxes that they need to.” (Teacher 5).

A borough representative suggested it was unlikely food growing would ever feature heavily in the OFSTED criteria because ‘they can't be experts in every element of a school and what they're doing’. Another stakeholder highlighted such issues as a reason FGSL may need to focus more on strategic influencing to shape drivers compelling head teachers to prioritise food and growing. Given the relatively weak strategic drivers pushing schools to grow food, it is particularly significant that some stakeholders identified a lack of understanding of the value and benefits, with a need for advocacy of robust evidence.

Advocating for policy change was identified as an area where FGSL and its partners may help, by seeking to influence policy to be more conducive to food growing in schools. However, stakeholders were aware that ‘policy takes a long time to form’ (Partner agency 8) and that it was too early to assess whether the city-wide programme would have wider impacts on educational policy. Furthermore, policy influencing was not a priority for FGSL, although it lent support to associated campaigns and advocacy, particularly through sharing insights regarding good practice. Challenges at the school-level suggest that gaining traction will require FGSL or other actors to push for changes to educational policy and strategy at the national level.

3.3.2. Strategic versus Hands-On Delivery

Whilst the model of partnership delivery and activity focused above the school level had advantages, it meant that FGSL had limited visibility. One partner noted that such activity is vital but often under-valued (Partner agency staff 12). It is more difficult for FGSL to demonstrate the outcomes of coordinating activity than of direct engagement with teachers and pupils. Schools repeatedly expressed an appetite for direct hands-on support with food growing, ideally through visits from experts like the FGSL engagement officers. However, the programme had limited capacity to deliver this and could not reach all schools seeking direct support, hence, the intention to focus on creating connections and acting as a conduit. What was feasible for FGSL did not always align with what schools wanted, pulling the programme in multiple directions. One interviewee suggested the need to support schools had perhaps absorbed capacity, limiting FGSL's ability to do more to build strategic connections or reach beyond ‘the usual suspects’. There were also questions about how sustainable networks built by FGSL would be beyond a core funded period when dedicated support to coordinate

and facilitate networking ended. Not all of the new networks are embedded within established governance frameworks or attached to policy drivers which might ensure longevity. It is particularly difficult to balance the priorities for immediate local delivery (i.e., school level), with the need for action targeting more systemic change which may not achieve immediate tangible results. These challenges suggest that city-wide programmes with limited resources and time-bound delivery struggle to achieve visible and durable change.

3.3.3. Spatial Constraints

Other key challenges encountered by the FGSL team and partners arose from the city's spatiality and how this is governed. London has more than 3000 schools, an impossible number for a team of six to engage with directly. Even given the approach of working via existing networks, and through remote support it proved impossible to reach them all. The practicalities of working across such large and diverse areas was difficult for the team, with complications, such as travel time required for visits or events. As the Croydon officer noted, schools in her area were unlikely to attend central London events due to logistical difficulties of transporting staff and pupils during a school day. FGSL sought to manage the challenge of scale through a strategy targeting boroughs, with officers allocated a selection each according to geographic areas. The team then sought to make contact with potential champions or partners in the borough authorities, with variable success. Across London the level of authorities' enthusiasm and commitment varied, depending in part on their overall commitment to food issues. Most progress was made in areas with receptive authorities, conversely 'If a borough isn't engaged it may be harder to engage with schools' (FGSL partner 4). The scale of working across London made it necessary to find brokers above the level of individual schools, making FGSL's progress dependent on the level of support and enthusiasm within each authority. Food is not a strategic priority for all boroughs, and there are no mechanisms for the city authority to require it to be so [1], meaning support for initiatives like FGSL are reliant on the presence of local champions or policies.

4. Discussion

FGSL has helped change the city's food culture through educating children and engaging them with food production, a relatively narrow focus which contributes one dimension of action towards more sustainable food systems. Support for the programme's aims from diverse stakeholders beyond the immediate school context suggest broad recognition of the benefits of food growing in schools and its contribution to other policy goals such as child health. Whilst others have sought to measure sustainability outcomes of in-school activity [18], our focus is understanding how higher-level support can enable actors in schools to contribute to food system change. For those seeking to establish similar programmes our findings suggest the importance of making support easy to access for over-burdened school staff. For many this includes a preference for direct engagement with experts, a demand challenging for voluntary organisations to deliver. A more efficient approach is to build local peer networks enabling schools to support each other. It is known that linking individual community growing projects can enhance their sustainability [25]; our findings suggest the same is true for school-based initiatives. Where resources supporting this role are constrained a solution is to channel advice through existing networks and key contacts in local authorities. Gate-keepers who have not already embraced the value of school food growing, may be attracted by highlighting contributions to health and education priorities.

Beyond these lessons for school and community growing support programmes, the case of FGSL provides evidence of what can be achieved through a single-issue food initiative within a holistic city-wide strategy. In relation to London specifically it demonstrates that the promise of the London Food Strategy which could have remained largely symbolic, stymied by lack of investment [1], is progressing through support of diverse actors including the Greater London authority, boroughs and civil society organisations. Next we reflect on what this reveals about the potential, value and

limitations of such approaches to promoting food system change towards more sustainable outcomes, learning relevant beyond the specifics of food growing in schools.

As will be apparent from the previous section, there are clear challenges arising from a city-wide approach meaning programmes seeking to achieve change across large metropolises may struggle to meet their ambitions. However, perspectives from across FGSL and its stakeholders indicate clear value in pursuing such goals, and seeking city-wide effects. The first advantage is that a city-wide goal, being clear, ambitious and universal, acted as a rallying cry which helped build support. Individual schools and organisations felt part of a larger movement, which motivated participation and added a sense of momentum. The ambition had an effect parallel to food charters which have unified city actors around urban agriculture thereby enabling positive change [14]. In part this was achieved by branding it as a London initiative, meaning actors in the city felt affinity with it. Being city-wide lifted the programme's profile, with events at City Hall, and appearances by the Mayor gaining attention and a sense of significance. Universal coverage also helped gain the support of institutions like the Greater London Authority, which have a city-wide remit. No school or borough was excluded from participation, which in turn attracted support from organisations working across the city. An associated advantage was that the extent of the programme encompassed a very large array of types of people, school, organisations, and methods of delivering food-growing. This presented a wealth of experience and practice to draw on and share, as one partner described it: 'There's every connotation of a problem and a solution that someone's found'.

One dimension of this diversity was contrasts between boroughs, and local authorities' varying degrees of support for food growing in schools. This allowed for benchmarking between authorities, and potentially even competitiveness which may drive each to strive to do more. *Good Food for London* reports annually on all authorities' performance across a range of activities seeking to promote a more sustainable food system and culture. Growing in schools is specified as an area of activity, with participation in FGSL a contributing measure. Should authorities be concerned about their position in such rankings this could encourage boroughs to act. The comparison at least highlights to boroughs what is possible and what else they might do in relation to food. This and reports on FGSL's impact could act as boundary tools advocating for change in local and national food governance [8]. Such boundary work is necessary because current governance structures continue to constrain what cities can achieve in terms of food system transformation [1,10]. The patchwork of food growing activity across schools and between boroughs in London highlights that although nominally a city-wide strategy, FGSL could access very few mechanisms with whole-city leverage. Those city-wide institutions which supported FGSL such as the Mayor's Office, lack control over policy which determines what happens in schools which lies at the national or local level [1]. London "aspires to create a new food system for the capital, but it manifestly lacks the power and the resources to realize this aspiration" [1] (p. 222). It is not the Mayor, but individual boroughs, which control food within schools, whilst curriculum is determined by national government, leaving the Greater London Authority only a symbolic or coordinating role. Cities tend not to have direct authority to deliver in relation to food [5], and problems which emerge from scales above or below the city level are not easily addressed by institutions located at that scale [2]. As some FGSL stakeholders suggested, real change around school food practices likely requires strategic action targeted at national policy to introduce an expectation that all schools participate, and universal support mechanisms to enable them to do so.

At the heart of FGSL's limitations are the fact that changing food practices and learning in schools has not been prioritised within educational policy. Where FGSL made headway in schools it came through linking gardening to priorities like health, educational attainment and entrepreneurial skills. Food's multifunctionality allows it to be positioned in relation to varied policy areas [3], a potential which remains vital when food sustainability remains a marginal goal. Where local authorities and others have begun to pay more attention to school food the priorities have been providing healthier meals [26], a pattern reflected in the issues prioritised for one borough as described above. Gardening has been perceived as 'nice to do' or something for less able pupils, associated with

vocational skills which are historically under-valued in the UK education system [27]. This means that any city-wide strategy is struggling to progress in the face of non-supportive policy contexts, which leaves them working as niche innovators [2,28]. However, there are advantages of targeting a niche issue like food growing. Some noted that growing can be a very visible and accessible aspect of school food for people—including policy makers and elected representatives—to grasp: “they can understand it, they see a garden, it’s impressive”. Stakeholders suggested it is perceived as non-threatening which makes it a relatively appealing aspect of food cultures on which to focus. This may help civil society actors avoid tensions with local government, of the type noted in other UK cities around more contentious food issues and criticism of local food policies [4].

The focus of a programme like FGSL on a single dimension of the food system is inherently limiting, apparently counter to holistic approaches to urban food transformation which currently prevail [2]. If city strategies are already a niche within the dominant food system [2], what chance for transformation from a niche within that niche? As Mansfield and Mendes [5] demonstrate through their analysis of a similar focus on urban agriculture, when delivered within the context of an overarching city food strategy, such programmes have advantages. Integrated food strategies may be too complex and multi-faceted to achieve change within the equally complex food system, whilst initiatives addressing a single aspect might find greater opportunities to intervene and build participation. The key, as they identify, is that these individual or partial approaches are situated within the context of a broader framework, to which they provide a point of connection. In this regard it is not clear the extent to which FGSL has capitalised on the potential to gain extensive buy-in through focusing on a ‘soft’ issue. To drive broader food-system change this audience, once reached, should then be channeled towards addressing ‘harder’ issues. In the case of food growing this likely means using it as a first step in introducing a whole school approach to food education, seeking long-term impacts on what and how children eat. If this potential is to be harnessed there will need to be better evidence demonstrating long-term impact on children’s behaviour and food choices as a result of participating in food growing at school, countering the current lack of longitudinal studies.

In light of the advantages and limits of the single food issue, city-wide model applied by FGSL, there would seem to merit in developing parallel approaches for other cities and other aspects of food system change. Urban food strategies arose to address the limits of extreme macro (national) and micro (household) level perspectives [2]. However, FGSL illustrates the difficulty of delivering change at the meso-scale in the absence of governance structures and policy drivers aligned at this level. The programme enabled change at the micro level of individual schools through creating and leveraging local drivers, such as borough networks and health policies. Change was less decisive at the meso-level of London because of the absence of city-scale enabling drivers and the effect of national policy pushing other educational priorities. Impact at city scale was more symbolic through expressions of London’s food growing ambitions, and the showcasing of multiple micro achievements. FGSL packaged change at numerous individual schools as a city achievement but activity remained piecemeal, and progressed in spite of a lack of city-wide levers or appropriate governance structures for food sustainability.

City food strategies represent a new localism that “does not have, in itself, the capacity to address problems that emerged and are experienced at different scales” [2] (p. 8). Problems and solutions touching cities originate beyond the city limits, hence successful strategies have to work on links between and across different scales, creating “a spatial, economic, environmental and social continuum between different, actors, interests and even policies” [2] (p. 9). To be more effective in delivering comprehensive transformation, city-scale action must connect outwards by linking cities with parallel goals, and drawing on the evidence and examples they generate to effect change nationally [8,10]. A city’s transformative potential lies in shaping new modes of connection between actors and governance structures [6]. For food sustainability goals this can be achieved by making connections to other issues and policy areas which have greater traction within government, characterize on foods multifunctionality [2,3]. FGSL advanced such connections through building new networks and partnerships focused on school food growing, and aligning with related interests such as child health,

creating connections between actors and policy issues at a borough level. Our findings highlight the value of investing in building networks and connections, activity which contributes to sustainability outcomes [6] but—as our interviewees highlighted—can often be overlooked in favour of more tangible benefits.

Connections between individual growing projects provide valuable support, but their sustainability depends on dismantling structural constraints by connecting them with politically and financially influential actors including the state [25]. Transformation also requires cities to connect upwards to higher-level policy and governance structures [6]. FGSL's model created a foundation for this by building borough and city-wide networks involving actors from civil society and beyond, including the Greater London Authority. These networks facilitated collaboration, learning, and reflection of the kinds Wolfram identifies as necessary for city-driven transformation [6], establishing relatively strong horizontal embeddedness. However, FGSL did not prioritise vertical connections to national actors and policy which are also required to enable cities to achieve transformation [2,6]. So far FGSL has used evidence of its impacts for London to argue that city actors should continue investing in supporting school growing, but is limited by constraints arising beyond the influence of these actors. Further advances in relation to school food growing are likely to require greater vertical connectivity, and pressure to remove barriers arising from national educational priorities. This could be achieved through a translocal approach mirroring that characterized by Moragues Faus and Sonnino drawing on experience of the UK Sustainable Food Cities Network [8]. Such a model involves individual cities delivering local food strategies, connected through the network, which also acts collectively to advocate for national change. This multi-level approach addresses change at local through to national levels, reflecting the multi-scalar nature of food sustainability problems and solutions. For FGSL this would mean replication of the programme in other UK towns and cities, linked through coordination and action as a national network. Such a strategy would require dedicated resource and expertise to scale the niche innovation up and out [28].

This research focused on London, home of the UK's first and most advanced city-wide initiative focused on food growing in schools. The city is both different from and similar to others [1], whilst food issues and solutions vary between cities [29]. Although food sustainability is being addressed globally [29,30], our focus has been developed world cities and urban food strategies so learning may be most transferable to other global cities located in similar countries. Comparison with parallel city-wide initiatives such as Grow NYC may reveal further insights, as would longitudinal perspectives examining long-term effects beyond an intensive period of programme support. Further research could usefully compare city focused approaches with national promotion of school food growing, or those working across multiple setting types. The challenge of developing governance systems suited to changing urban food systems persists beyond London [30,31] suggesting merit in further attention to innovations in this area.

5. Conclusions

The achievements of work to support school food growing in London demonstrate the value of programmes working strategically above the school level to stimulate food education activity. We have highlighted learning transferable to organisations supporting schools with similar sustainability initiatives. Those seeking to replicate FGSL's achievements in other towns and cities can further participation in food growing and the resultant benefits in terms of changing food cultures through initiatives mirroring its activity. The programme's success demonstrates the value of investment in strategic interventions aiming to shape favourable conditions for food education projects. The value of network building has previously been promoted in relation to community gardening [25]; this study suggests similar benefits for school contexts.

More broadly, the case of FGSL suggests there is value in approaches centred on a single food issue acting within the context of a holistic city-wide strategy for food sustainability. FGSL demonstrates that progress is possible and likely enhanced through a city-wide strategy centred on creating

new partnerships and networks aligned around localities and a shared interest in the benefits of food education. This strategy has the advantage of a clear and singular focus, targeting relatively narrow outcomes, thereby circumventing challenges urban food strategies can face when addressing multiple complex, potentially competing, priorities [5]. However, experience of FGSL suggests that the other two challenges identified above remain a barrier. Increased attention to food has not translated into prioritization in relevant policy areas [1,7], in this case education, particularly school curricula. Relatedly, city-wide bodies lack control over policies and delivery mechanisms required to deliver change. Despite having been identified as a challenge for the Greater London Authority and Food Policy Board almost a decade ago [9] little has changed. Initiatives like FGSL still rely on the cooperation of sub-city authorities, and remain constrained by supra-city national policy. Progress remains limited by the lack of enabling governance and policy mechanisms at the city level [1,2], suggesting that the transformative potential of cities may have been over-estimated or at over-optimistic. Wiskerke's foresight that weak institutional capacity may limit progress in some cities seems borne out ([29], p. 21). For city-focused programmes to effect wider transformation requires local connectivity to be supplemented by vertical connections up to national governance structures, drawing on the power of evidence of the networks' achievements to advocate for policy change. This suggests a need amongst city food networks to identify actors best placed to take on the role of connecting upwards, and then agree how food sustainability allies can support them. Alternatively, city level action may best target issues for which control *has* been devolved to city authorities, such as waste or spatial planning [29].

The relational perspective Sonnino points to highlights that city-wide initiatives work through the amorphous and connected nature of cities as the sum of individuals acting at the micro scale, whilst under the influence of macro systems and policies. FGSL packaged change at numerous individual schools as a city achievement but activity remained piecemeal, and progressed in spite of a lack of city-wide levers or appropriate governance structures for food sustainability. Whether such changes represents urban transformation is open to debate, as is the question of which approaches to achieving city level change are most effective and efficient. These questions could usefully prompt researchers to compare approaches like FGSL's with other ways of driving city-wide change.

It is also important to note that although programme targeting a single-issue like school growing may have inherent limits in their ability to transform food-systems, they can gain traction through focusing on a well delineated and relatively straightforward form of action. Reflections on FGSL suggest merits in using non-controversial food issues to attract stakeholders and engagement. Sustainability outcomes might then be extended through a staged approach which uses this as a platform from which to address other food issues. Future research can help shape strategies which achieve this by investigating which food sustainability activities and outcomes appeal to each stakeholder type. Further investigation should also explore how initial engagement with one dimension of food sustainability can be converted into interest in other food issues and actions. There is a specific need for evidence of longitudinal impacts of food growing on pupils' food behaviour, and resultant benefits for the food system, including influence on family food purchasing habits and wider food cultures.

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