



**UNIVERSITY
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LOTTERY FUNDED

“Maintenance and Sustenance”

Challenges, Opportunities and Growing Food in Primary Schools in the London Borough of Southwark and the Royal Borough of Greenwich



Report
July 2014

Dr Jennifer Patterson

Acknowledgements

I would like to thank The BIG Lottery and The University of Greenwich for providing the opportunity and funding to undertake the work presented in this Report and its dissemination. Thanks are also owed to my colleagues at the University who have supported me in this initiative, in particular to Dr Mark Kerrigan for website instruction, and to James Lambert for funding advice and to Dr Damien Page for support. Thanks are owed to individuals in various local and national food-growing organisations who gave their time and offered help and networking to validate the process and its dissemination. I would particularly like to thank the following groups with whom we have had conversations and meetings: Greenwich Community Development Agency (GCDA); Southwark Council; The Royal Borough of Greenwich Council; Sustain (including Capital Growth); Garden Organic; The RHS; Project Dirt; SEEd and members of local voluntary initiatives, SNUB and Growing Southwark.

Most importantly, thanks are due to all of the individuals working in schools who gave so generously of their time to answer the survey and again to those individuals, some passionate about gardening, and others less so but all passionate about working with children, who gave their own time to attend the focus groups and to be interviewed.

Particular thanks are due to Charlton Manor School and Bellenden Primary School for hosting the focus groups and providing delicious food to sustain our conversations. Thanks are also due to Nether Wallop Trading, who generously supported our initiative, supplying paper potters for all attendees. I would like to extend personal thanks to Yara Pascale Fuessel for her support in administering the online survey, in running focus groups, providing the funding resource sheet and her assistance with the project. I would also like to extend my thanks to Mike Keogh and to final year students for support in contacting schools directly about the survey and for data collection and to Andrew Toplis, for support in data analysis. Finally thanks to Caz Burley, John Donne School and Widehorizons Outdoor Education Trust for photographs.



Maintenance and Sustenance

A snapshot of Growing Food in Primary Schools in the London Borough of Southwark and the Royal Borough of Greenwich

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Published in July 2014. By The University of Greenwich, Old Royal Naval College, Park Row, Greenwich.
www.gre.ac.uk

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ISBN 978-0-900822-99-5

How to cite this publication:

Patterson, J. (2014). *Maintenance and Sustenance: Report on food growing in the London Borough of Southwark and the Royal Borough of Greenwich schools – July 2014*. London: University of Greenwich

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1. Executive Summary

This report presents the challenges and opportunities for food growing as an educational activity with a focus on local Southwark and Greenwich Primary schools using data collected from research surveys, focus groups and interviews. Survey information comes from 80 schools, 47 in the two South London target boroughs, of which 31 were Primary schools. The maintenance and sustenance of growing food requires detailed consideration of local challenges contextualised by wider national responsibilities to address a business case for growing food in schools.

Research Questions:

- 1) What is the nature of 'growing food' in schools and in particular, how is this activity practised in Primary schools in Southwark and Greenwich?**
 - a) What are the characteristics of food growing practices in terms of space, access, use, beliefs, practice and funding?
 - b) Are there differences between the boroughs and if so why might this be?

Overall the picture presented competing interests and values, activity, input and work at the grass roots, as well as and despite a lack of networking and resources. Schools are enthusiastic and doing their best to grow food but perceive benefits differently. Different approaches correlate with different beliefs about time and value in educational practice. Space is insufficient and therefore inefficient and relates to deprivation indices.

- 2) What is needed to start, maintain and sustain growing food in schools?**
 - a) What is needed to start, maintain and sustain growing food in schools?
 - b) Who is involved in starting, maintaining and sustaining?
 - c) How might this activity develop and flourish, producing food and enriching educational practice?

At local level, the single most surprising initial finding was a lack of access to shared ways of working, resources and funding, necessary for maintaining successful growing. Only (20%) received support from or belong to food growing groups or networks. Growing frequently involved working in isolated ways, individually or in teams, with surprisingly little access to support. Schools are willing and eager to do what is in the best interests of the children but are extremely busy environments with many competing priorities and are time poor. Focus groups and interviews showed that the majority struggle to do this work, which is usually voluntary and frequently undervalued. Further, the research found that Experiential Learning pedagogy involved in food growing in schools, which is different to mainstream pedagogy, is not functioning to support the educational benefits of the initiative. The report calls for funding for this work in schools and for more research to support it.

The business case for growing as an educational activity

The environmental case for food growing addresses global issues at local level. However, the business case involves tackling national social problems whose implementation costs fall almost exclusively to school budgets. Relatively few government resources support what is essentially presented as an entrepreneurial educational activity yet includes meeting many health and education targets similar to the new school meals agenda. While growing food supports individual children's education, it also addresses such complex and costly national social and societal issues as nutritional understandings and rising obesity, environmental citizenship, and also educational engagement and exclusion. These have huge national budgetary implications with cumulative potential for children's and future adult health and wellbeing. Growing food in schools is a cost effective means of long-term planning for a better, more robust and ultimately less costly future. It is extremely difficult for schools to cover ongoing food-growing costs, without substantively rethinking how they operate and they need funding to do this, to work creatively with cross-curricular activities and the entrepreneurial management of food growing spaces. The funding currently available supports starting up but not maintaining growing. Schools are struggling to access time, money and leadership. Every school should be a food-growing school, for the benefit of the children they educate; however, more resources are needed on the ground to drive this healthy future in support of national, international and global agendas.

2. Introduction

This project presents an in-depth account across primary schools in two London Boroughs, Southwark and Greenwich, and a sampling of other types of schools and children's centres in these boroughs and elsewhere, outlining the structural issues and challenges for food-growing initiatives, focused on support and maintenance.

2.1.1. Rationale and research gaps

Growing food initiatives in schools and in community groups have been well supported in recent years but with funding less available and several projects failing, the longer-term sustainability of such projects is becoming a serious issue.

Considerable work has been done on the impact of Food-Growing programmes on children in the form of studies and evaluations of large national projects involving children as research subjects (Teeman *et al.*, 2011; Orme *et al.*, 2012). Taking the Food Growing in Schools (Taskforce Report 2012) as a starting point, this study aimed to fill a gap in understanding why projects fail through better clarification of the needs of on-the-ground provision, through the shared voices of those who do the growing. As such, it brings a different perspective to growing food in schools.

2.1. Research Questions

- 1) **What is the nature of growing food in schools and how does it function, particularly in Primary schools in Southwark and Greenwich?**
 - a) What are the characteristics of food growing practices in terms of space, access, use, beliefs, practice and funding?
 - b) Are there differences between the boroughs and, if so, why might this be?
- 2) **What is needed to start, maintain and sustain growing food in schools?**
 - a) Who is involved in starting, maintaining and sustaining?
 - b) How might this activity develop and flourish, producing food and enriching educational practice?

2.1.1. Strategic aims of the project

As a community consultation across the London Borough of Southwark and the Royal Borough of Greenwich, this project aims to understand how food

growing initiatives work in order to establish why they might fail to become sustainable and what can be done about it.

It aims to consult those doing the work on the ground to help ensure that future funding and projects are focused on supporting schools' needs, to share models that have worked well, as well as to link up schools to share best practice.

2.1.2. Survey sample information

After adjusting for duplicates and incomplete responses, the total number of survey respondents was 80 from a range of locations in the UK, of which 11 did not identify their school. The number of respondents belonging to food growing groups was 20%.

Respondents in target boroughs came from 10 different types of schools and numbered 20 and 27 schools in total. The response rate for Primary schools was 13 and 18 or 18% in Southwark and 26% in Greenwich respectively.

Borough	Total	Responses	%
Southwark	73	13	18%
Greenwich	69	18	26%

2.1.3. Overview of method

The research employed a mixed methods approach that collected mainly qualitative data, seeking to ensure meaningful qualitative findings at a local level where the growing takes place that can be applied to other settings and locations. Data was collected from survey responses, 2 Focus groups and 5 semi-structured interviews, emphasising practice and experience.

2.1.4. Dissemination and evaluation

The research process aimed to support food growing activities on the ground via an on-going process of sharing information, networking and dissemination, offering transparent mediated contextual information and information exchange, making the research and its approach applicable in other localities. In addition to contacts via schools, dissemination strategies included internal websites, workshops, events, outreach with food growing organisations, press releases, articles and twitter. The final dissemination event gives space to the experiences of children and launch report findings.

3. Background to growing food in schools

Food growing in schools is closely intertwined with the concept of childhood and subject to historical ideologies of the developing or growing child as a 'natural' being (Joyce, 2012). This influences how children's education is thought of today. Such influences are explored in more depth in section 11.

In London, the current initiative for food growing in schools comprises a coalition of partners led by Garden Organic including:

- Capital Growth
- Food for Life Partnership
- Mayor of London
- Morrison's Let's Grow
- RHS Campaign for School Gardening
- School Food Matters

3.1.1. Literature

Several Reviews of literature and evaluations have recently been carried out in this field to assess the impact of programmes such as Food for Life (Orme *et al*, 2010; Barratt Hacking, Scott and Lee, 2011), The School Fruit and Vegetable scheme (Teeman *et al*, 2011) as well as Defra-commissioned work by the National Foundation for Educational Research (NFER) (Nelson *et al*, 2011), to support the Food Growing in Schools Taskforce initiative. This produced the Food Growing in Schools Taskforce Report (FGIS, 2012). The Taskforce, a collective of stakeholders led by Garden Organic, made recommendations with the aim of every school in the UK being a food-growing school, and has evolved into the Food Growing Schools: London project, a partnership led by Garden Organic. The current survey offers evidence that correlates with some FGIS findings.

The focus of this research is on ensuring the voices at the grass roots, so to speak, are heard. In this report, literature is used selectively to elucidate findings and present contextual information.

3.1.2. Policy

The Food Growing in Schools Taskforce Report (FGIS, 2012: 10) cites a United Nations "belief...that school gardens can become a seed ground for a nation's health and security" in support of changing perceptions. FGIS (2012) established UK government recognition by Caroline Spelman, Secretary of State for the

Department for Environment, Food and Rural Affairs (Defra) for contributions made by food growing in schools towards government policy objectives: "reconnecting with food – with its provenance, its cultural significance, its variety – will help us develop healthier habits. It will also help us value the natural environment, which is the ultimate source of all our food" (FGIS, 2012: 4).

Successive policies from other UK political parties, including the Labour's *Growing Schools* initiative, launched in 2001, have espoused similar messages: "to enhance our children's understanding of the environment we will give every school student the opportunity to experience out-of-classroom learning in the natural environment" (Labour Party Election Manifesto 2005, cited Saunders *et al*, nd). Equally, "we believe that out-of-classroom learning is a key part of a good education, and will include the quality of out-of-classroom education in the criteria on which schools are inspected" (Liberal Democrat Election Manifesto 2005, cited Saunders *et al*, 2011). However, despite this considerable evidence of cross-party agreement on clear educational values, schools struggle to sustain food growing activities and many children lack access.

3.1.3. Borough contexts

Despite their relative proximity, the two Boroughs of Southwark and Greenwich offer different models of growing food in schools. In Southwark a number of individual volunteers have led the way forward, individually and collectively seeking funding from different sources, and working with schools to get growing. Some schools, have continued to fund work, other schools are struggling and continue to depend on volunteers, and especially on teaching assistants (for details of size and relative deprivation appendix 12.1).

In Greenwich on the other hand, the volunteering for growing food has been largely co-ordinated by the GCDA. In 2004, research in the Royal Borough of Greenwich demonstrated that a shift from low cost processed meals to healthier options led to improved attainment in English and Science and improved attendance, suggesting links between improved diet and attainment (Belot and James, 2008). The host school clearly shows national leadership in this area, some Greenwich focus groups respondents had some

experience while others were relatively new to growing or trying to revive growing activities that had stopped.

4. Methods and methodology

This research used a mixed methods design to support a case study approach to a phenomenological understanding of the nature of school food-growing practices. Data (mainly qualitative) was collected across the boroughs to offer complementarity between, and illustration of, the selected areas, with triangulation of results supporting a convergence of information that ultimately reinforces reliability (Tashakkori and Teddlie, 2003; Cresswell, 2003). Research in sustainability tends to examine such understandings in relation to continuity or maintenance of practical interventions. In this case the mixed methods approach facilitated researching human understandings and insights into their own environments and practices, particularly as we sought to determine needs and to share useful examples. We also sought to expand information in successive iterations of data collection. In this way, information for interim survey results fed into focus groups and information from focus groups fed questions asked in interviews enriching data. This functioned as an ethical means of co-constructing or community sharing of knowledge by which we had become informed. This passing on of the experiences of others effected a sustainable recycling of inquiry within the methodology itself, acting as pollination, a method for carrying messages and fertilizing conversations.

4.1.1. Sampling

Survey sampling was intentionally purposive being based on a strategy of targeting schools in the selected areas large enough to be representative and potentially comparable across boroughs, yet providing data about different practices and types of individual schools. Response rate from busy over-surveyed environments was good. Focus group sampling was self-selective by survey respondents. Interview sampling was opportunistic.

4.1.2. Survey

Informed by findings in FGIS (2012) and Nelson et al (2011) the survey, 'taking the pulse' (appendix 2) contains a mixture of closed and open questions and takes 15-20mins to answer. Schools were approached in three ways. Personalised emails were sent in July 2013, with three follow-ups (Sept, Oct, Nov 2013).

Borough Emails: Personalised emails sent to head teachers in both boroughs inviting them to have their say in a consultation about food growing in schools. Emails were collected from address lists available in the public domain from the local boroughs. These were updated and adjusted.

Sending out information on the survey via the Project Dirt food growing network and as press releases to Garden Organic, Eco schools and South London Press sought to generate a snowball effect and allowed access to a population beyond the selected group.
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Existing University contact and placement lists for Primary and Early Years

Information was sent out as press releases and articles on the project to food-growing websites. Finally an email was sent to an internal University list of contacts. The survey was closed in February 2014. To increase response rate, a member of staff phoned each school once, avoiding busy periods and alerting the school office to the survey. A link was re-sent via email where appropriate. Another member of the team approached schools with paper copies.

4.1.3. Focus groups

Two focus groups were held, in February 2014, one week apart and one in each borough. These combined a focused conversation with supportive food-growing workshops that reflected school 'needs' voiced in the survey: funding and creative curriculum. The two groups numbered 17 and 16 attendees including headteachers, teachers, teaching assistants, gardeners and other members of wider school communities.

4.1.4. Interviews

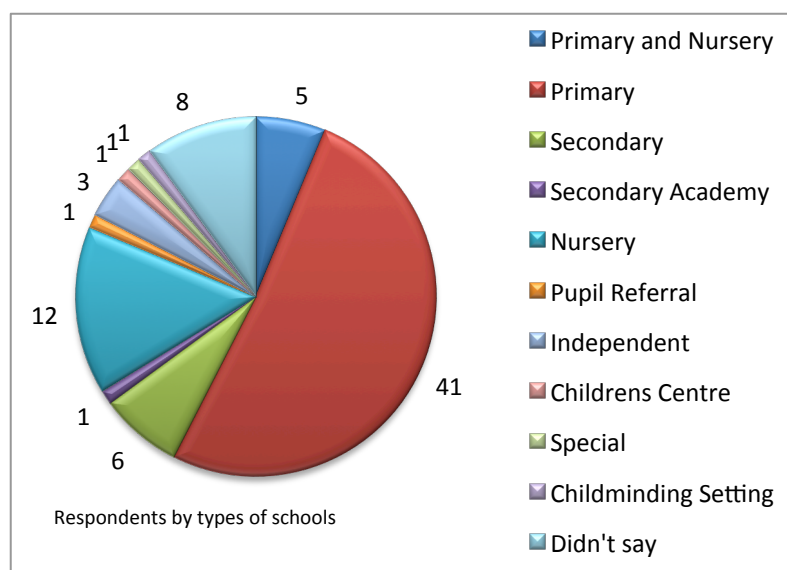
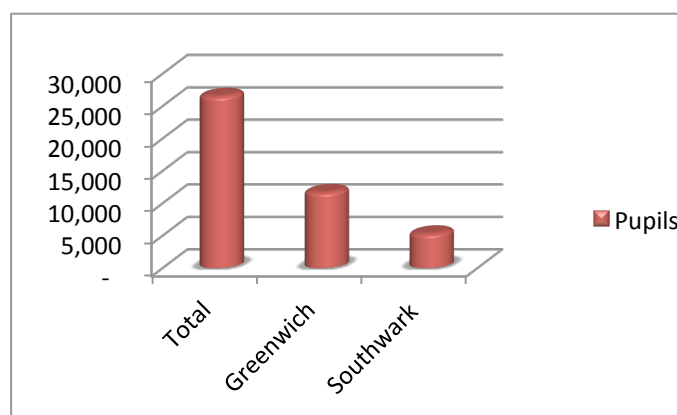
Five interviews were held to add depth to information that arose from the focus groups and a couple of informal interviews to clarify some aspects of partnership, funding and outreach.

5. Results and analysis

This section examines the nature of growing food in schools, how it functions, and differences between boroughs.

5.1.1. Survey

A total of 101 surveys were returned (appendix 12.2). These however contained a number of duplicates, complicated by those having been started and later completed, counting as two entries. With adjustments, the total number of completed surveys was 80 across the UK. Altogether 18% of Primary schools in Southwark and 26% of Primary schools in Greenwich responded, giving a representative picture across each of the boroughs.



5.1.2. Respondents

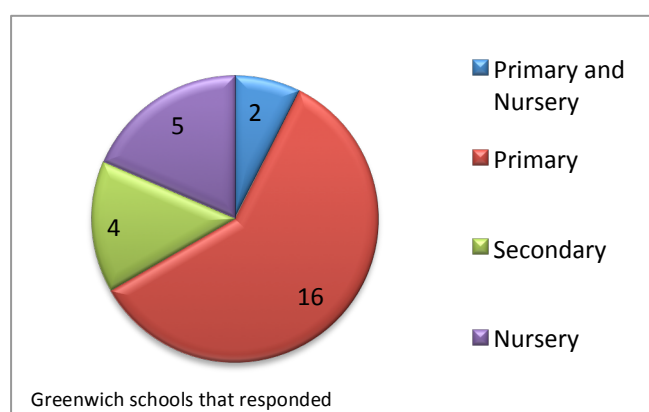
Overall the survey covered around 25,000 children in 10 types of schools of whom 16,944 attend schools in Southwark and Greenwich. 10 schools did not offer pupil numbers. 4 schools did not grow food and lacked space to do so.

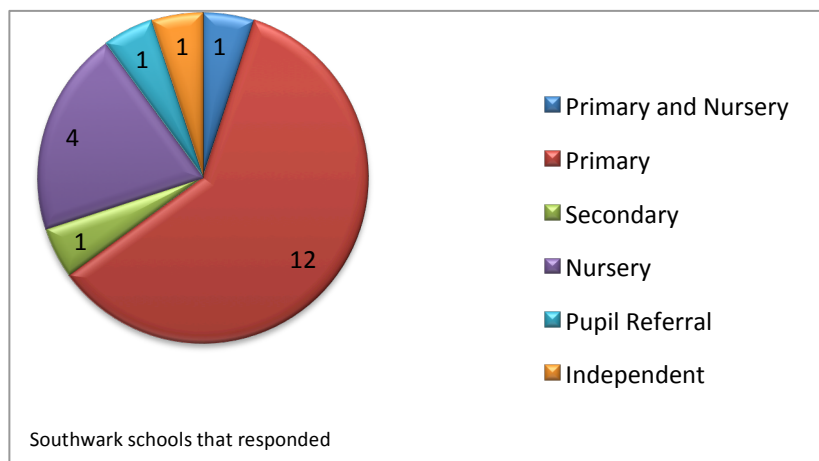
5.1.3. Respondents: by schools

Ten different types of schools completed 80 surveys, comprising a useful data set for sharing information and a background to a focus on Greenwich and Southwark. In addition to correlations, the breakdown of this data set is

permits sharing and comparing similar types of schools, for example special schools, or different Early Years settings in other areas, or for comparison of rural and urban settings.

The larger number of respondents (27 in total) from the Royal Borough of Greenwich compared with The London Borough of Southwark (20) is mainly due to existing relationships between the University of Greenwich School of Education and local schools. The full Greenwich data set gives the breakdown of types of schools. Surveys were sent out via University networks in addition to the borough listings and the dating of responses corresponded with phone calls made.

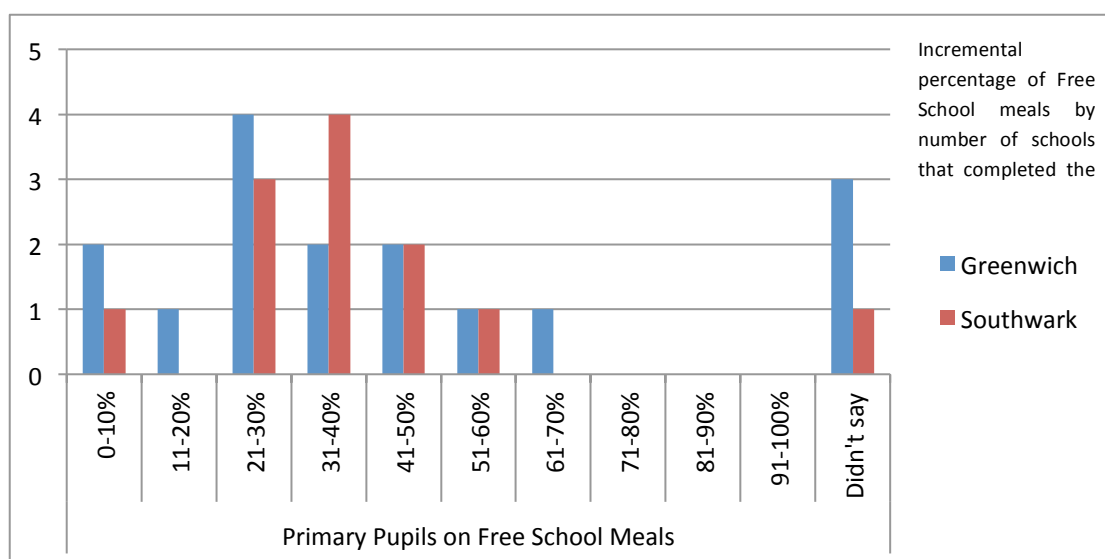




In Southwark, a lower number but a wider variety of types of schools responded, including a special school, an independent school and a pupil referral unit. These are included in the full Southwark data set of a total of 20 schools. In the main sample, there are six special school respondents. The proportions of Primary and other schools and of nurseries are similar in both boroughs. For the purposes of comparison, only data from primary schools is included in the Primary schools data sets for respective boroughs.

5.1.4. Respondents: free school meals

Free school meals (FSM) is been a common measure of deprivation in education settings. Recent government legislation (The School Food Plan, 2013) provides FSM for children in reception through year 2. In Southwark a free



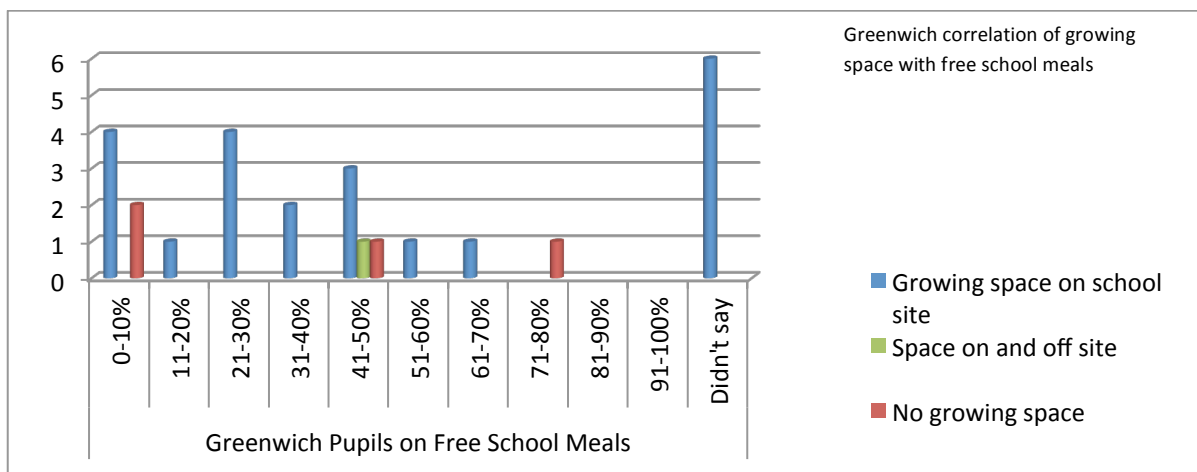
school meals policy has been in operation from Sept 2013. Of 18 Primary schools in the Royal Borough of Greenwich, one had no free school meals and three did not respond. Of 13 In Southwark, two did not respond. The distribution curve of FSM in both boroughs is broadly similar.

5.1.5. Growing Spaces, access and size

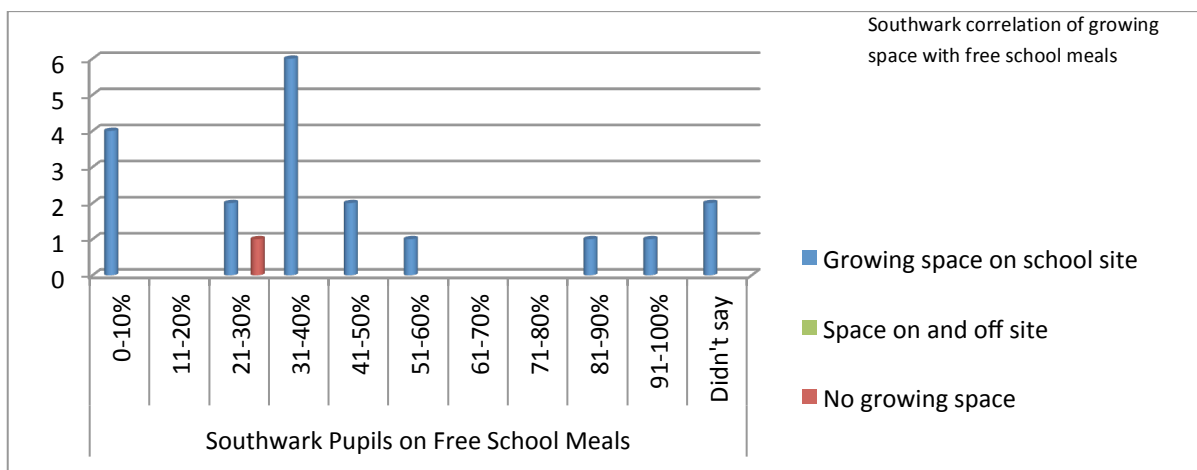
The main sample of all schools in each borough was used to determine any relationships between access to space for growing and free school meals. The data also showed the size of growing spaces in operation, useful for consideration of cost-benefit relationships. Very few schools use off site growing space and one of those with no outdoor space indicated it was doing this.

5.1.6. Growing Spaces: children's access

Data showed some relationship between space available for growing at schools and lower percentages of pupils on free school meals. This is a particular challenge in inner city environments, and especially for Victorian buildings. In some instances, those children who most need the benefits of food-growing educational activities have the least access to it. In Greenwich more schools said they had no growing space than in Southwark. However, it is the amount of space available (5.2.2) rather than its accessibility that demonstrates this relationship.

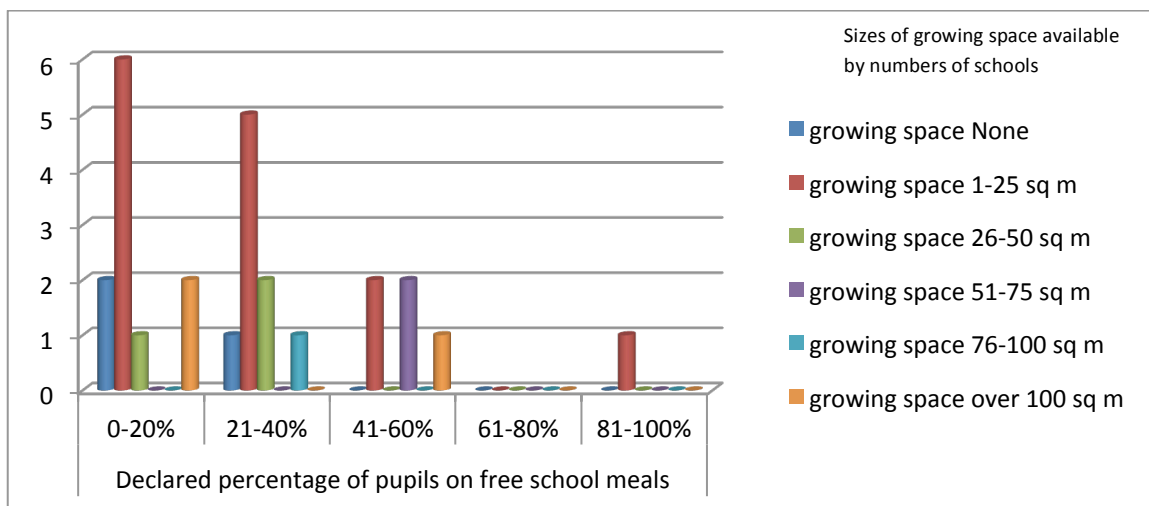


In Southwark some respondents with high FSM indicated that they had growing space at school but this may be a result of the differing FSM policies in the borough.



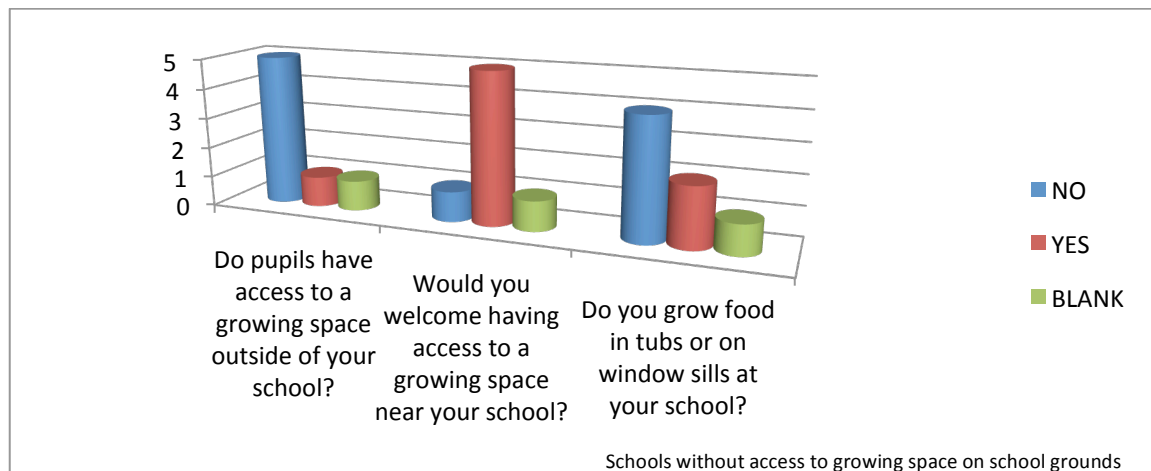
5.1.7. Growing Spaces: size

In Greenwich and Southwark schools, the most frequent size of growing space is between 1 and 25sqm with five schools having between 1 and 10 and another seven using between 10-20sqm. Only three of the schools surveyed said they had more than 100sqm of growing space available to them.



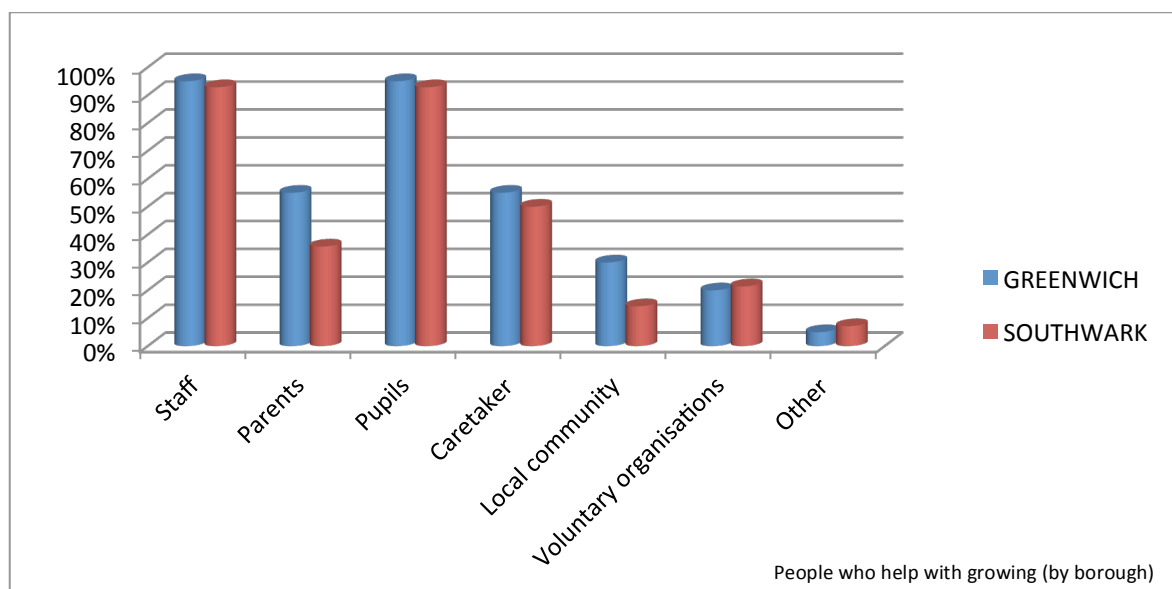
5.1.8. Growing Spaces: schools without access

Seven schools in both boroughs had no access to a food growing space at their school. This involves a total of 2779 children of whom the majority, 2,426, are at school in Greenwich. Of these, one had access to a food growing space outside of the school and 5 more would welcome such access, with one saying they would not.



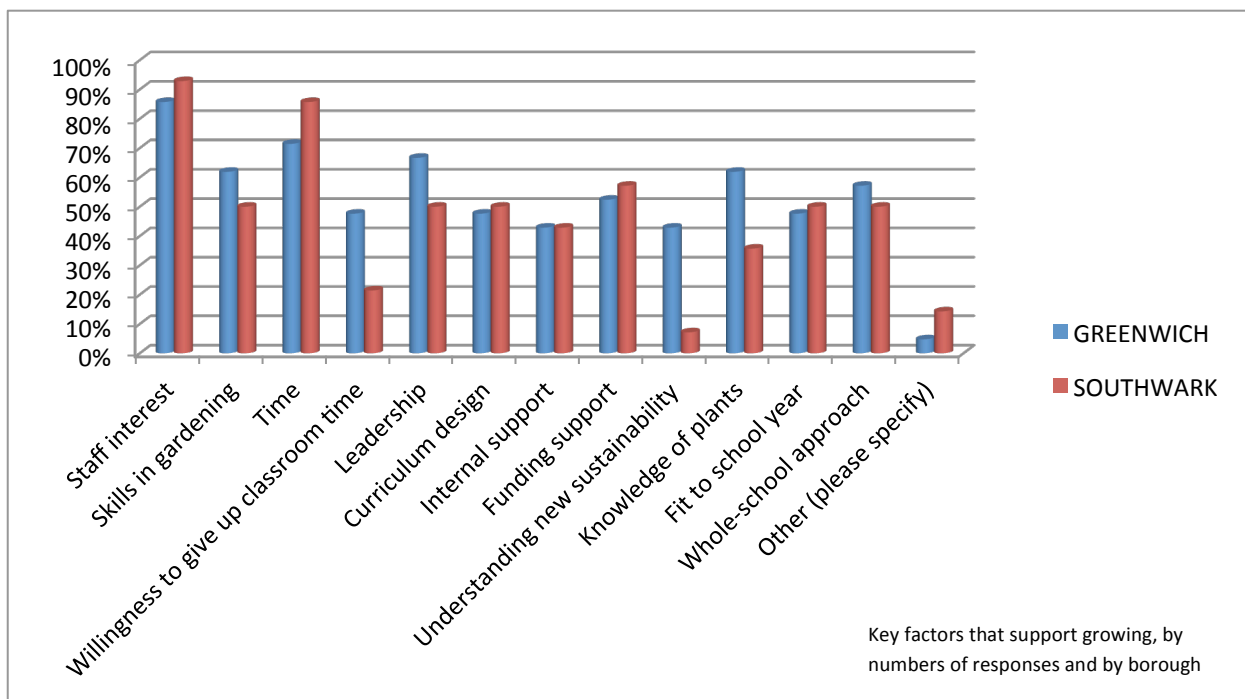
5.1.9. Who helps with growing?

Profiles of people who help are similar although In Greenwich, parents and the local community helped more with growing than in Southwark. However there was slightly more help from voluntary organisations in Southwark.



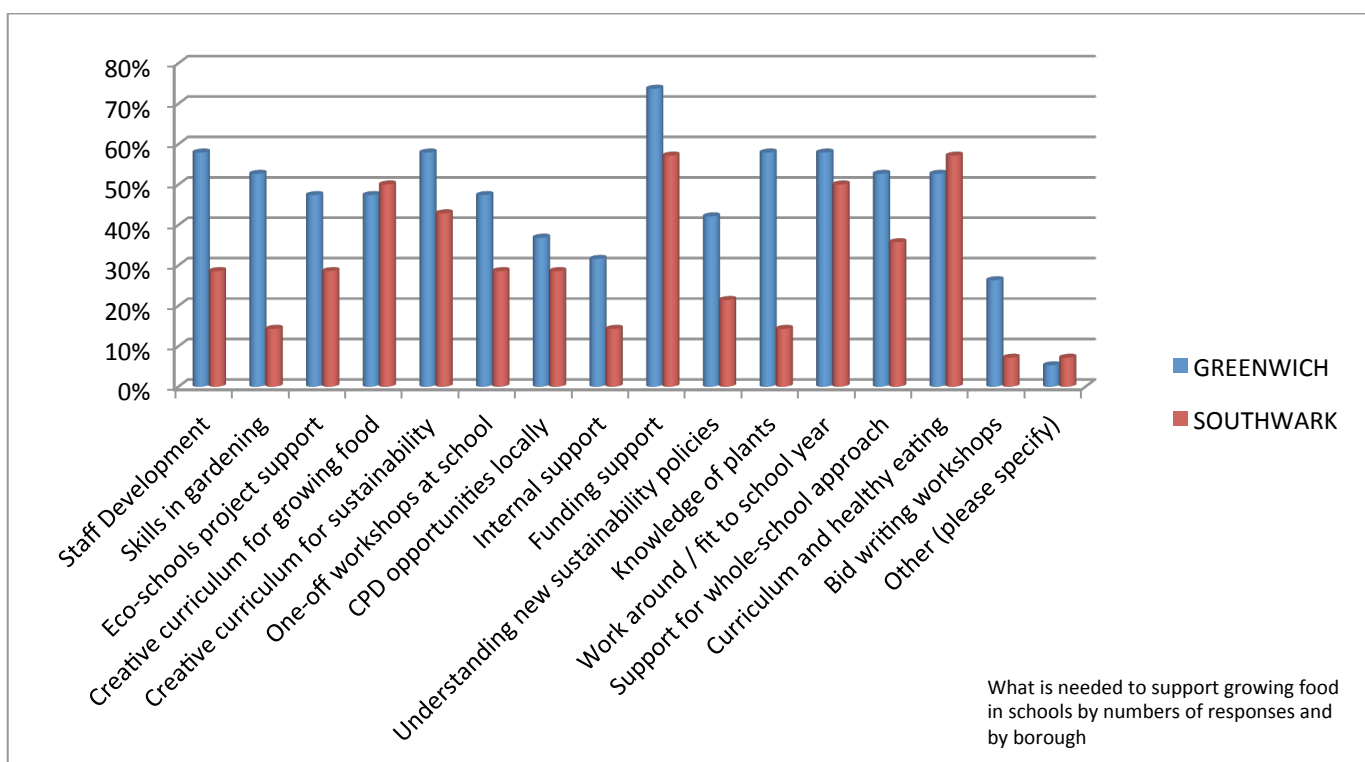
5.1.10. What supports how growing works?

We asked what features characterised food growing to gauge and differentiate different aspects of practice. We found that there were significant variations in the two boroughs although staff interest and time was key in both. In Greenwich, staff interest, time, leadership, knowledge of plants and skills in gardening, were followed by whole school approach and funding support. In Southwark, staff interest, time, funding support were the top three, with skills in gardening, leadership, curriculum design, fit to school year and whole school approach coming in together in fourth place. Interestingly in Greenwich, understanding new sustainability policies was thought to be important but not in Southwark. This was also true of willingness to give up classroom time, which rated only 21% from Southwark respondents. 14% replied 'other' and these included linking with Forest School, training offers and getting started.



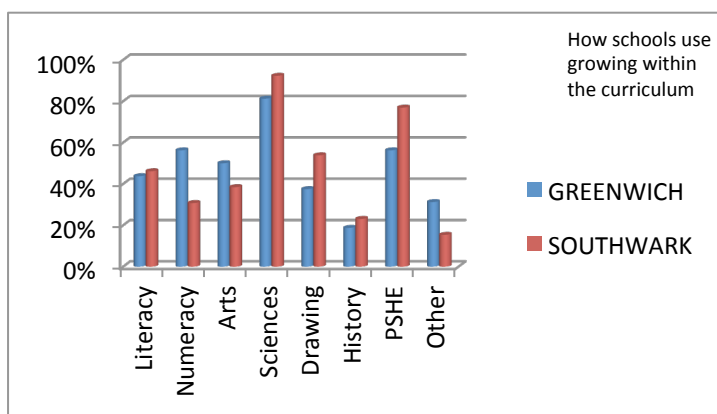
5.1.11. What is needed to improve growing?

This question was key for our survey, as it touches on aspiration for growing and thereby maintenance and sustenance. The highest priorities were funding support (74% and 57%) and curriculum and healthy eating support, with creative curriculum for food growing and for sustainability also important. For both, the fit to the school year rated 50% and 58%. In Southwark there seemed to be more knowledge of plants and gardening skills and these were considered not as necessary, scoring over a third less than in Greenwich. Staff development was twice as important in Greenwich, which also rated workshop opportunities more than Southwark, where support for a whole school approach was also less important than in Greenwich.



5.1.12. Curriculum Use

Appreciation of the relationships between growing food, the sciences and PSHE in terms of health and wellbeing is clear. Growing can make an obvious contribution for teaching plant parts and photosynthesis at Key Stage 1. History is surprisingly little taught. However, when the aspirational graph of what is needed to improve growing (5.5) is compared to curriculum use, the very high rating for all kinds of curricula indicates a substantive need for training and support.



5.1.13. Benefits of food-growing

The survey asked respondents to rate the benefits of growing food to offer comparison with other recent research.

Southwark Respondents	1 - Small benefit	2	3	4	5	6	7	8	9	10 - Huge benefit
Improved motivation	0%	0%	0%	0%	0%	23%	15%	8%	31%	23%
Skills in gardening	0%	0%	0%	0%	23%	8%	8%	15%	23%	23%
Horticultural skills	0%	0%	0%	0%	23%	15%	8%	15%	15%	23%
Raised science achievement	0%	0%	0%	8%	25%	17%	0%	0%	17%	33%
Wellbeing	0%	0%	0%	0%	0%	31%	15%	0%	23%	31%
Strengthens community links	0%	0%	0%	8%	23%	0%	31%	0%	15%	23%
Improved in healthy eating	0%	0%	0%	0%	23%	8%	8%	8%	23%	31%
Encourages learning	0%	0%	0%	0%	8%	8%	8%	15%	23%	38%

Greenwich Respondents	1 - Small benefit	2	3	4	5	6	7	8	9	10 - Huge benefit
Improved motivation	0%	0%	0%	6%	0%	0%	17%	6%	17%	56%
Skills in gardening	0%	0%	0%	0%	0%	12%	0%	12%	18%	59%
Horticultural skills	0%	0%	0%	0%	6%	24%	0%	0%	12%	59%
Raised science achievement	0%	6%	0%	6%	6%	6%	0%	22%	6%	50%
Wellbeing	0%	0%	0%	0%	0%	6%	0%	11%	22%	61%
Strengthens community links	0%	6%	0%	6%	0%	11%	6%	11%	17%	44%
Improved in healthy eating	0%	0%	0%	0%	0%	6%	6%	24%	12%	53%
Encourages learning	0%	0%	0%	0%	0%	0%	0%	11%	21%	68%

FGIS (2012) commissioned stakeholder research that surveyed 1,300 early years, primary and secondary schools, reviewing relevant literature, including other relevant and independent research. The report argued that food growing in schools:

- Encourages and facilitates learning, particularly science learning.
- Builds skills, including life, enterprise and employment related and horticultural skills.

- Improves awareness and understanding of the natural environment and its importance to us.
- Promotes health and well-being, particularly in relation to diet and nutrition.
- Supports school improvement and development.
- Strengthens communities and school-community interaction.

5.1.14. Funding

30 Respondents from the whole sample offered the following comments about funding for growing activities. One school achieved “all sorts” but others work with little or no external support. The inclusion of all entries in response supports the finding that only 20% belong to a food-growing network as these usually promote funding initiatives.

Funding	Local Sources
None; Nothing to date None at present None so far we are planning to write (with children) to B&Q We are in the process of doing so None Have very limited time in which to do anything like this!	Some support from local garden centres; We are adjusting our school based raised beds through some money from Railtrack as we are next to a railway line; Local pick your own farm; We have got support from local businesses Local Inspire charity based at Elephant and Castle
School-based initiatives and funding	National Organisations
Only school based fundraising at the moment. We have had huge support from PTA Selling produce at fetes and farmers markets. Labour intensive but involves children and quite rewarding. Sponsored sunflower growing (tallest wins a prize). We have taken many of the old plants that the park gardeners have pulled up and thrown away We host farmers markets and sell plants to staff to try to help us with extra funding. None. We have a Budget. We have had a table sale. Plant sales. The plant sale was a success and we also sold books. We raised money via 'Phil the bag' which went to the garden. Had a 'plant pot amnesty' + got lots of plant pots that don't stack together. Plant stall. Successful. Spent it on more plants. I have been given vegetable seeds from various seed manufacturers	Capital growth, Earnest Cook; Black Environmental Network (BEN); Morrison's Let's Grow; We got Lottery capital growth for our nature garden. The allotment was originally started through funding from LIFT 10 years ago; We applied for a Royal Borough of Greenwich 'Greenwich Pride' award in April 2013 and were granted the full amount. Won London Environment Award when that initiative existed, 2005-2006 Silver/runner up award for clearing the disused site that is now the Growing Area. [Food Growing Grant linked to our School Caterers ISS-very useful indeed because there is not a lot of time consuming activities to have to do to get funding, Let's Grow Morrisons Voucher Scheme-successful but one needs loads of vouchers to get any equipment We used our Sainsbury's vouchers for a gardening tool set for the children to use. Collected Morrisons vouchers + got some equipment. We collect Morrison vouchers and nectar points which we convert into garden equipment and plants.

5.1.15. Survey Conclusions

In general, the data demonstrated local similarities and differences locally between respondent schools growing food in the London borough of Southwark and the Royal Borough of Greenwich. These may relate to different local government policies in each borough but this was not possible to determine. Key findings such as correlations between deprivation and available space for growing were common to both. Significant differences were evident in terms of how growing works and also strength of beliefs about the educational use and value of growing. Respondents in Greenwich indicated higher benefits across the piece than those in Southwark. All schools felt they needed a range of support to improve growing and that staff interest and time were the most important factors.

6. Focus Groups

The first focus group comprised teachers, NQTs, and education professionals, a parent and a landscape architect in a Royal Borough of Greenwich school and included a tour of the garden and children's kitchens. The Southwark group contained 3 women who worked as "environmental educators", a Nursery owner, Early Years teachers and a teacher from a hospital school. Both groups also had senior education management staff.

Interim survey findings indicated that local schools were not benefitting from local networks, or from national initiatives but would like to do this and wanted to find out about funding. Many schools also indicated a need for creative curriculum support, which we saw as an opportunity for engaging staff interest, another highly rated 'need' for success. Workshops in the focus groups therefore aimed to respond to this and seed links with food-growing organizations to support schools (Handout examples appendices 12.3 and 12.4). Conversations within the two groups were surprisingly different, perhaps as the first had a higher proportion of Primary teachers and the second seemed to have more widespread hands on relationship to local growing activities.



We invited the both groups to discuss their thoughts on 'time for growing' and 'leadership in food growing' as these had been rated important for maintaining growing in the Survey. The conversation was steered in terms of what they had experienced, would like to have in an ideal world, what the challenges are and how they might be able to find solutions to overcome challenges.

6.1.1. Interactions and networks: voices sharing information, support and challenges

The quality of the discussions was a mixture of problem solving, show, tell, listen and share. Both focus groups were hungry for communication and conversation with like-minded professionals, to be able to share information about what they were doing, to ask questions about tricky challenges and to seek support. Respondents collectively discussed, for example, who had managed to obtain funding, how to deal with pests such as squirrels and snails, and they offered solutions for different aspects of getting going, maintaining and progressing growing, for fit to school year challenges and best vegetables to grow as well as for making and selling produce.

Sharing challenges and issues within the focus group valued the experiences of all in the room as people worked effectively together to seek and deliver practical solutions. For example one individual shared her concerns, asking advice on engaging sick teenage children in a hospital setting with a flow of students and a lot of space to garden but for whom getting out of bed can be an achievement: "I don't know how to cajole them into going outside, into the cold". Suggestions on engagement were practical and related to age of children, place and time of year: "in a secondary school...we base it around what they want to eat...raw...peas with cheese...maintains the interest as they know they're going to get to eat it...there's not much preparation". Another suggested: "what about sowing seeds, indoors at this time of year?" There were further helpful suggestions around gardening clubs and recommending specific books and membership of organisations for obtaining information on seasonal planting.

6.1.2. Focus on time

For one group, time was agreed to be more available in both nursery settings and in Early Years, since growing is “seen as part of what we do” and is already used in “cross-curricular ways”. This was clearly due to team planning and a common interest: “we are going to be doing literacy via the potato. It’s something that we wanted as a team, because we know we have a common interest, so we are on board for it, I think you have to be.” Thinking of growing, experience suggested that “teachers do bits within the curriculum but don’t really have the time themselves” and “there is never enough time” due to the work involved. One gardener educator, spending two days in one school, two days in another and providing private workshops commented:

I don’t think it would happen without me...they simply don’t have the time, the teachers don’t have the time” and a split role between maintenance, own garden clubs with children and getting teachers to actually take their whole class outside...that’s the hardest thing is getting the teachers outside.” [Another replied] “Yes that’s what I was gonna say, because I do the same work as you...its not the growing time it’s the sort of admin time involved in...networking within the school and within the parents because you get paid for your gardening time but you don’t get paid for bringing, you know, the extra [mmm] and that’s what I think should be really highlighted as the thing that funding should be aimed towards because everyone can see when kids are outside that its beneficial but they don’t see the background work that you have to do to set it up.



An excerpt of conversation continuing around the room in the second group demonstrates the questioning and sharing of information for solutions about how different schools managed time, as well as the tensions.

“Do you have parent helpers?” “A few but not enough.” “In our school children volunteer to come earlier...the caretaker he is the one letting them in and there are always staff, who come early and then there’s someone, we have a rota...and weeding, its mainly volunteers, actually.” “We have a lot of kids, to restrict them, yes, year 6s, year 5s, or they all would be in there.” “Yes and it has to be a whole school thing, doesn’t it, a whole school project otherwise it just ends up falling on the shoulders of the parents... ends up falling short...tried to develop the land...I’ve had three parents doing everything and it gets just unmanageable, doesn’t it.” [general agreement] “We try and involve the whole school as well...and parents come and join in...and we use it for positive reinforcement...it really helps improve behaviour...cause they all want to come to gardening club...we try and build it into the curriculum.” “And do your year groups have plots they manage?” “Yeah, they’ve got their own beds.”



6.1.3. Valuing Growing

Time had a clear relationship to value and perceptions of food growing being educational or not. In one group, a teacher described the interests competing with food growing: “it would just be really nice to have the time...these lessons you’ve got fill up the week with and you’ve gotta tick off these targets...and you’ve got to tick off all of these other things every day of the week...I’d like to have a fixed time...Our head is really supportive...a fixed time would be good.”

Time formed a complex dynamic in relation to perceptions of education, work and how gardening was valued in terms of pedagogy.

[First speaker] “We say that everybody you know, values it but I’m not sure that everybody does. I don’t think normal teaching staff really understand *how* it is of value...I come in and I do the gardening with children...it’s up to teachers to choose, in my school, who comes to do gardening ...I work with year 5 classes...but I’ll often get oh no, we can’t

send you any from our class today because they're behind *in their* work, as if what you're doing is *not work*...and its seen as this, and I don't want it to be seen *as some sort of reward* it's not a reward, it's an essential part of their day. So, you know, and that I find very weird, would they stop someone doing a literacy session or a numeracy?" (agreement). [Second speaker] "But they don't test it do they you see, you see, what's important is what's tested, so they won't. You are always going to get that...as teachers want, because if *they don't* get the test results then *they* get in trouble, you see, it's this whole accountability isn't it and what's important, and at the moment what's important is maths and English isn't it?" [Session Support] "And can you think of a way of overcoming it?" [Third Speaker] "Well yes, it's so obvious (general agreement, yes, absolutely), so many children learn better outside. I had one child that had, I started 4 years ago at one school, he had quite severe learning disabilities, really behind in his reading and writing. And now he's in year 6, he's *chosen* a secondary school that *has* a gardening club. That was his *only* ultimate goal... you know that was his main focus because he, he *opens up*, he reads gardening books, he learns plant names, he speaks *through* his interest." [Second speaker] "Well, yeah...and not so much, maybe, I think maybe... you would find that maybe, a lot of teachers do feel that way but because they are being so much pressured from above, until *the above* realise that what is important is *the learning* and the *enjoyment of learning* (general murmurs of agreement) you will always have that little bit where people worry. But I agree totally with you ...they will learn so much more from doing that than sitting looking at a whiteboard all day".

Questioning about why growing was so important led to further conversation in the other group:

"teachers are so under pressure...it's not easy." "What is the valid reason for doing it...what is the motivation, rather than just a little club?"

[selection of replies]

"I'm from Finland and we have three reasons – when you grow it you eat it...for behaviour management...and the seasonal aspect."

"Food is a popular subject...it's gonna have relevance."

"Our school's looking at it like a class project, a social project."

"Food is all about education, what food came to our shores when...weights and measures, it's actually getting out there and measuring...it's about what we do to our bodies, the nutrients, it's an effective way to teach the child, to help them remember and retain information about their bodies, it's the all embracing thing about education...it encourages community, inclusion and good development of the body for future life...parents here don't do this" All the learning and everything else doesn't matter if you're not healthy, so it's a real key thing...[how do you find time here] well we know what an exciting practical curriculum involves. It involves hands on activities for the children, it works for them, it works for me and it works for the school."

Some teachers have clear pedagogical understandings of the importance and usefulness of growing and food, others are less certain. The need to address this for teachers to become more engaged in growing is vital to its success as an integrated and cross curricular activity.

6.1.4. Interviews

Five interviews were carried out with a headteacher, a parent governor, a Newly Qualified teacher (NQT), an environmental educator, and a local business person, who in a voluntary capacity has run growing projects with several schools. Informal fact-finding conversations were also held with representatives of both local councils and with other organisations working in the sector.

Individual interviews further explored valuing and growing and considered time and benefits, what works and what does not. Issues with volunteering also arose. Some interviewees commented on feelings of not being valued, and of being uncertain about being valued for something that involved hours of unpaid or voluntary time:

...they didn't timetable it in, and so I was always doing it in my lunch hour and after school, just doing it off my back, but I think I kind of, I got tired quite honestly, I got disillusioned, because there was a time I got some little mini greenhouses, and had it all stacked, and it had my pots and that, and they needed to box in the bins, so the workmen just knocked everything over...[it] was just all falling apart, and I looked at it and it was just obviously discouraging, you know, and...it's really discouraging, that sort of thing, when it happens...I just felt there was a lack of value...They didn't do it on purpose, but there was a lack of value for it.

I think there's going to be a big disconnect, if I'm honest, between [them] because there's a location difference. Whereas I think if we've got a lot of interest generated in the school, and children are growing things here, then they are taking them there down [there] and they are growing and they are nurturing them, then I think that's where that interest and that connect will be. My big thing is they are not

necessary, they are all just going to see it as an afternoon out... they are not going to see the true benefit. So that's where I'm coming from.

Q Why do you think that seeing something as an afternoon out is not a true benefit?

Don't get me wrong, I think there is a benefit there, but I also think that if there is a connect between why they are doing things, so they are growing things at school and nurturing it and they are bringing it on, and they might not succeed always in things growing, things might die off for whatever reason, but I think if there's the connect between seeing it from it's very early stages right the way through to picking it and harvesting it and bringing it back and attempting to cook at the school, I think you've closed the full circle.

What is seen and what is hidden was another theme allied to recognition and valuing the work that people do. This came out strongly in one of the interviews where, despite support at the top, a level of bullying developed in respect of the popularity and functioning of outside growing space.

Three of the interviews confirmed what the focus groups had suggested about it being "very, very common that a teaching assistant has to be the gardener" as well as carrying out their other role. Another point made by two interviewees was the lack of time that schools have to get funding, to get gardening going. Three interviewees had become heavily involved in obtaining funding to support this work in schools as the schools simply did not have the time to do the administration or this aspect, nor, particularly, the evaluation updates that came with the funding.

One of the interviews with a head teacher offered an explanation from a leadership perspective on resistance to Experiential Learning and also a robust understanding of engaged, Experiential Learning.

I think for a lot of heads there's a fear, if we let the children go out and play they are not going to learn, their attainment won't go up higher, therefore we'll be classed as a failing school, so let's make every child sit in the same straightjacket, by sitting them in a classroom with a worksheet or a whole list of calculations to work through, and then just keep pushing them. Oh yes, those that are rebellious because they don't understand it, no those that are rebellious let's get rid of, and then we can carry on raising attainment. Whereas here we have many children who've been, who come to us via Fairer Access panel, and I could walk through there in the school and you wouldn't be able to point them out. Because so many of the teachers do use the outside environment and get the children learning by doing, those children who rebel suddenly aren't rebelling anymore, because they are doing by hand, they've got hands-on experience of it all, and by getting hands-on experience they understand it, then they can write about it with knowledge....

when you set a challenge, particularly, you know, with some of our more able children, if you set a challenge they'll go off and they'll do it on their own. You'll find them around the school without an adult with them, engaged in what they are doing. You know, oh what's going on here then? And they'll tell you exactly what they are doing, and how they are doing it, and why they are doing it. The less able children, because they've got their hands in it, on it, making it, creating it, they, again, can tell you exactly what they are doing and why...

We do still have a couple of teachers who are resistant because they are very much theory driven, and will my results start to fall if I allow them to get out there and do? And if I'm not in charge of it, if I've not got control of it, then will the children learn? And I think that's a part of it as well, the, I need to be in control of what's happening. And to give children a problem, and let them run with it, you know, can be a little bit...

Taken as a group, the aspect of time was the most worrying factor. It was directly related to value and to a systemic whole school approach but also to the cost benefit business case for growing in schools, and to who should have responsibility for this. Worryingly, volunteering could be problematic and required careful management. A visit to a local school, in an area of Greenwich with a high deprivation index focussed entirely around a garden, presented here as a case study, offered further food for thought.

6.1.5. Case Study visit

CHARLTON MANOR SCHOOL

Website: [http:// www.charltonmanorprimary.co.uk](http://www.charltonmanorprimary.co.uk)

Charlton Manor Primary School in the Royal Borough of Greenwich has won a number of awards for their Secret Garden, co-designed by the children at the school that forms the outdoor heart of the school. Indeed the garden brings the inside out and the outside in, playing a key part in a specially designed curriculum. For example, year 4 class grow and harvest carrots, making them into biscuits using a recipe from World War II. A lesson like this incorporates maths and history, as well as giving the children a better understanding of where their food comes

from. The garden is also used in art and design classes, when children decorate their own flowerpots. Growing works at this school because the school functions around the garden as a teaching environment and resource. The salary or cost of the gardener is therefore simply seen as that of a valued Teaching Assistant.

Every opportunity to learn something is carefully considered in this garden. Even the compost bin has clear plastic on one side, so that children can see what is going on, when they stick the large attached thermometer into the rotting leaves to measure the heat (and therefore energy) created by decomposing matter. There is a hide, for watching birds, bug hotels, a large cage with bee-hives (and ways of looking carefully in). Meanwhile the chickens are busily scratching around the ground. Every space is used and ingeniously thought through.

On Tuesdays after school there is garden craft club and gardening club on Wednesdays after school. There is a cookery club too and parents as well as children learn about cooking and nutrition. The school hosts food and growing events, with teacher training, and has excellent networks with individuals in the sector who visit, including Chris Collins, the Blue Peter Gardener and Raymond Blanc, the chef. The school has successfully obtained funding from various sources, such as Capital Growth to make the secret garden a success. The school budget also contributed to the garden, as did other grants and donations, for example the green house was donated. The local community is heavily involved, for example the local bee keeping club helped create and advise the school on keeping bees, and the school went on to become Capital bee competition winners.
<http://www.theguardian.com/education/mortarboard/2011/aug/30/beekeeping-in-schools>

Fresh fruit and vegetables are sold in the 'fresh pickings' shop that the children help run and market. Charlton Manor also has an allotment, to supplement their produce and employ a full time gardener. All proceeds are put back into the running and continuing success of the garden. The children are even learning how to sell their honey online. Last year they harvested over £1170 worth of food, an incredible edible 200kg of vegetables and fruit. They also contributed some 2,470 meals to the Capital Growth *Growing a Million Meals for London* campaign. Since having the garden the school have won awards at the Chelsea flower show and received RHS level 5 Award.

7. Discussion

This section considers some of the tensions that inhabit the landscape of growing food in schools. It begins by describing the intersection between children and gardens, continues by discussion of curriculum and pedagogy and ends with a discussion of the business case. All participants are the experts in the world of growing in schools that is being considered here. I grow food at home rather than in a school and am also a practising herbalist. I believe that children need to engage with food, with growing and the outdoor world. In my experience this form of active learning is also enormously beneficial for students, who develop and gain valuable transferable skills. Discussion of research offers an opportunity to consider wider contexts. Contextual consideration of sociocultural constructions that influence growing food in schools supports the experiences evidenced in the research. Making more transparent the influence of these theoretical perspectives and frameworks may support a process of flourishing by turning the soil. It does not offer a tidy solution.

7.1. Discussion: The influence of Western Social and Cultural contexts

Since both "childhood" and "garden" are socially and culturally constructed (and differently constructed in different cultures), the relationship between them is complex. Rosaleen Joyce (2012) gives an excellent discussion of Western history of religious, State and educational frameworks influencing the intersection of children and gardens through the work of practitioners and theorists such as Comenius, Pestalozzi, Froebel and McMillan. At a pragmatic level, the use of gardens in children's education has evolved from individual practitioners' beliefs, observations and experiences of what works best with children. This relationship between the two is clearly manifest in Froebel's term "Kindergaarten" or the anglicised "kindergarten".

However, the idea that children are closer to nature is not an innocent one, loaded as it is with the purposes of education in relation to citizenship and civilisation. It has been historically driven by concepts around the civilising or taming of children through education (and the ideologies of developmental psychology). So, just as children are “civilised” to become citizens, so the garden has represented an anthropocentric ‘taming’ of nature. The Foucauldian perspective of education as an institutional framework offers a lens for determining how Western Culture has framed the idea that children should garden to produce food. This places notions of agrarian relationships between humans and “nature” within the highly problematic relationships between power and education. The metaphor located in the kindergarten (as a garden for and of children) from this perspective reflects a Western citizenship agenda (institutional power) and care for diverse identities and cultural relationships to food-growing and therefore needs careful thought because its influence is pervasive. From an educational perspective, such cultural loading gets in the way of valuing other forms of educational curricula and it reflects current confusion of valuing gardening as education. This is seen both in our own data and in other research in growing and gardening in schools. For example, the idea of seeing the cost of a school gardener “as another Teaching Assistant [salary]” represented a significant shift in thinking that was met with surprise in one group and needed unpacking. In the second group, one attendee said “I am called a teaching assistant...and employed by the school...I wish every school had someone who...I hate to say it but I do think it helps having someone who has a job, it is their job and they have those particular skill sets actually there, employed, and it is so important because the children *really love it.*” This group, with a high proportion of environmental educators passionate about gardening and food growing in schools spent some time discussing their struggle to be paid, one even obtaining the funding to pay her own salary, amid the undervaluing of work done by environmental educators in schools. Such a devaluing of both the role (of an individual and usually voluntary ‘gardener’) and of children’s access to growing spaces was a theme was confirmed through interviews and discussed under ‘education’ below. Yet in practical international and global terms, environmental education is imperative for children as young adults working with the future reality of climate change and the need for sustainability.



7.1.1. Discussion: Educational values, curriculum and pedagogy

Time correlated closely with values and appreciation. Focus group and interview participants clarified perceptions of this relationship. Proposed solutions were clear to a few who had gained understanding through their ways of working or had the leadership skill sets and the power to do something about changing things. These solutions represented a minority of experiences. The majority of individuals found time and other resources extremely challenging and faced challenges in negotiating how to transition this in their own contexts.

Subject-based traditional curricula leading to assessment, and food growing activities were clearly placed into opposing categorises throughout



discussion by all but one member of the focus groups. Different thoughts about why growing food is educationally

useful came out of questions and answers from a number of stakeholders in focus group discussions. Different stakeholder narratives presented different discourses with both covert and overt consideration of values and their recognition. These manifested relative values in respect of inputs and organisation of time, levels of access, recognition of learning, and monetary representations of activity such as roles and salaries, as well as support through partnerships, voluntary help, or funding. That people felt growing to be valuable was obvious in most cases but what that value consisted of and what sort of pedagogy it involved was not. Perhaps this is because of pressures that have led to extreme conditions and competing priorities in schools, at least in respect of time.

Experiential Learning pedagogy is usually associated with outdoor education and is not generally well understood in mainstream schools. Although teachers value growing, focus groups and surveys both identified a need for greater teacher engagement, especially better understandings of the complementarity and benefits of Experiential Learning pedagogy could support this. The Defra-funded 'Natural Connections' project at Plymouth University (<http://www.growingschools.org.uk/about/natural-connections>) is working with over 200 schools in five deprived areas in the Southwest to effect such a change but much more needs to be done.

An emphasis on close working relationships supports a community in which learning is shared and becomes reinvigorated and exciting (Patterson, 2014). A report from Lancaster University into School Farms found that "involvement in these kinds of activities provides both personal and group 'cognitive momentum' (i.e. seems to aid learning by embedding 'sense making' in the semantic memory) so promoting short and longer term skill, knowledge and emotional learning" (Saunders *et al*, 2011). The same text comments on the changing pedagogic understandings of effective learning strategies. It stated that small clusters based on practice (for example producing food and farming) are known to:

Enrich and embed learning effectively in comparison with solely 'text based' or 'decontextualised' learning in classrooms. This is reflected in changes in the primary school curriculum and to emerging approaches to more flexibility in the secondary school curriculum. (Saunders *et al*, 2011)

Interestingly, farm schools have seen recent expansion and there are now over 100 members of The School Farms Network, including a few in inner city areas, some offering horticultural and livestock curricula (http://www.farmgarden.org.uk/index.php?option=com_content&task=view&id=28). Linking with some of these could prove of great benefit to mainstream schools.

Adults who have not been trained to facilitate, rather than to formally 'teach', can find it extremely hard not to lead. More importantly, their judgments are informed by different values that relate to the provision of education. Ideas about education are constantly in transition influenced by and reflecting societal views. Today, the balance between hands-on education and head-based education needs to be redressed in UK schools that have become increasingly focused on testing, while at the same time producing ever lower standards when ranked internationally. Higher ranked models in Europe tend to have a greater emphasis on relationships with nature and value Experiential Learning, particularly in early childhood but also in older children and adults.

Experiential Learning, or learning by doing has to be child-led since the experience and the learning that evolves from the process belong to the child. The environment in which the experience takes place is important, as it needs to be a rich multi-sensory environment, such as the outdoor world. The experience is a holistic activity as it is engaging the children and all of the senses available to them. The relationship between engagement and learning (and conversely between disengagement and behavior), was only voiced in one group by a head teacher who works in this way: "children more than anything need engagement". He told the group:

"If you watch children go in the garden and get involved in planting seeds you can pour all the learning into them, all the literacy, following instructions, the creative writing, you know the secret garden, all of those things you can create and build. It's about creating environments where children are excited and switched on."

In such an environment, creative curriculum engages human beings learning about any subject through the relationships they are making with what they are doing. It is not just the hands on experience but the embedding (and nurturing) of the learning that has taken place that is crucial. There is strong evidence in this research of a division between gardening curriculum and gardening knowledge and subject-based curricula. Yet support within schools for team development of creative curriculum and cross-curricular activities also demonstrates a way in which the relationship to the outdoors can free up time, becoming a source of educational experience, health and wellbeing, and real-world learning such as problem solving that transfers, for example to numeracy and literacy.

7.1.2. Discussion: Environment

Recent theories view the interactions between humans and their environment as an ecosystem. Physical human body relationships to oxygen and food offer useful examples of a systems approach to human ecology that facilitates future environmental understandings and our human role. Interviews and focus groups conversations demonstrate that being outdoors changes children's behavior. The relationship between internal human body chemistry and the external 'natural' surrounding environments through full sensory engagement offers one of the reasons why outdoor environments are so successful for behaviour management, as discussed in interviews and focus groups. Working with managed habitats to experience growing, cultivation and the interrelated connections between local environments, the plants they support, the soil and the various elements necessary to achieve a flourishing growing bed ecosystem, enhances human understandings of ecological connections and our relationship to the planet and the world within which we function. Exploring how to work with this relationship is more critical than ever in a time of uncertainty. The earth is after all essential for our survival whereas we are not necessarily essential to it.

The benefits of growing food and being in contact with the 'natural' world therefore supports a number of agendas. Increasingly today these reflect the position of the child in the world, global agendas such as sustainable citizenship and sustainable food futures. At local level, growing in schools is dealing with values that are not just about our individual relationship with the world (deep ecology) we live in but about sharing that world in a caring and ethical way with the rest of the world (sustainability).

Urban children's lack of environmental understandings represents a challenge that has been presented in literature in the United States as a medicalised psychological issue "nature deficit disorder" Louv (2010:10). Indeed for Louv this links to a sense of awe and wonder at the inexplicability of nature that comes in many forms, as well as to a full sensory and even overwhelming engagement that is profoundly and therapeutically calming "the woods were my Ritalin" (*ibid*). In the UK the work of The Save Childhood movement and of authors such as Sue Palmer (Toxic Childhood, 2006; 21st Century Boys, 2009) and Tim Gill (No Fear: Growing up in a Risk Averse Society, 2007) demonstrates a growing body of academic and public concern, about a lack of balance for children becoming over assessed and formally taught at increasingly younger ages. It highlights a shift away from exploratory 'natural' developmental activities such as play, risk, learning by doing and being in nature with concern for wellbeing and education increasingly disengaged from the real world.

In the second group, in Southwark, three participants saw themselves as "environmental educators" and worked in schools, growing food and maintaining food growing spaces and sometimes school grounds and educating children about gardening and growing food. These individuals had substantial experience of working in this way with children and knew how it worked. They were passionate about the work they did and its value. All worked with schools, mixing some paid employment with private courses and outreach. They also had substantive experience across a wide number of schools. One of the women knew of another 7 working in this role in local schools, leading the way in environmental educational activism.

7.1.3. Discussion: Business Case and Cost benefits

In one of the focus groups a nursery with a large garden and six raised beds for growing food were described by staff as having “an abundance” of produce. Around 40 children grew and ate vegetables, bringing them to the chef and having discussions about what to eat. Indeed “they also like to go in the garden and just pick up the radishes...sometimes tomatoes, or we also grow raspberries blueberries strawberries, blueberries, redcurrants...they just help themselves”. Educators at the nursery felt that growing had always been valued and that schools and nurseries operate in different ways in terms of time and have different priorities. Vegetables did “not [contribute] a massive amount” to school meals being rather “hit and miss” but lettuces were popular and knowledge was needed about what it was useful to grow. Another respondent who knew the school described this as “a really unusual situation, as there is a chef on site, there is a cook, who is interested in using the garden produce” unlike other schools in which she works, where this is a bit of an issue. She has experienced resistance to incorporating food grown on site in school meals from the kitchen, because of difficulties of scale and due to meal planning constraints.



Another suggested that lots of little dishes of salad were one way around this, with potatoes, beetroots and lettuces. The general consensus was that this adds enormous value for the children, rather than being of measurable financial value to the school.

In an ideal world, schools should be able to produce enough fruit and vegetables that would make a difference in school meals. However, the sizes of growing space available to schools, discussed in section 3.3 above means that most schools have insufficient space for growing practices to be efficient in a simple produce-based cost-effective



return on revenue benefit analysis. For example, originally designated for the poor, and then formalised after World War I, allotment plots were allocated on public land to individual households to enable them to grow vegetables and fruit to supplement their diets (<http://www.nsalg.org.uk/allotment-info/brief-history-of-allotments/>). The size of an allotment plot is 5 rods, or 252.9sqm. Only three of our inner city urban schools across the two boroughs had a plot measuring more than 100sqm.

Schools are resourceful and resilient communities. Start-up costs might seed growing funds but were ultimately less of an issue than staff costs for ongoing maintenance and organisation. Initial capital costs have been mostly used to purchase materials and funded from within schools, by tenacious individuals and by parent associations, building year on year where there is continuing support. There has been some funding from growing organisations and there were many stories of serendipitous donations from local builders, garden centres, as well as local voluntary support by individuals and organisations, help from local businesses or parents with useful professional contacts. Fundraising for individual items and ecological

alternatives made use of literacy lessons in persuasive letter writing as they did of recycling old tyres as pots and creating bottle greenhouses, as popular and sometimes essential alternatives.

Our research demonstrated the willingness of individual and schools to be involved in growing. It also highlighted pedagogic tensions (discussed above). With budgets now in the hands of headteachers in the form of pupil premiums, leadership around consideration of the purpose of education is clearly key. It is critical to view the staff who look after the growing space as teaching assistants or teachers, so their salary costs come out of the school teaching budget rather than being additional to it. Both focus groups were also clear that schools could not maintain long term food-growing activities without leadership and a whole school approach. Food growing benefits broadly offer creative entrepreneurial opportunities for community engagement with all involved.

While the case study school in Greenwich has been able to make the educational and business case for working with Experiential Learning, there are a large number of reasons why this would not work in all schools, as dynamic communities with their own identities and agendas. It works well for some, and local knowledge suggests others are slowly making changes. However, even if there were some additional monies from successful bids for funding support, it is unlikely there would be enough money to cover basic costs. Growing food is a patchwork of complex interrelated inputs and outputs with drivers and influences extending far beyond their local application. These do not relate simply to the produce itself, or to life-changing individual benefits whether substantiated or contested for children, their families and wider communities. Cost benefit analysis needs to take these drivers and influences into account in weighing up inputs and outputs and for establishing sources of funding to transition more schools into successfully maintaining effective growing practices.

One of the main drivers behind the UK and US government support for food growing and cooking initiatives in schools is the rate of obesity. Both boroughs face increasing challenges, with child obesity running at well above average. This is around 25% in Greenwich, while Southwark with around 28%, had the highest rate in the UK for Year 6 children in 2011 (Nolan-Bertuol, C., 2012). The National Child Measurement Programme (NCMP) for 2012-13 shows a fifth of 10-11 year olds to be overweight and demonstrates a positive relationship between deprivation and obesity prevalence and a significantly higher prevalence in urban areas compared to rural areas for each age group, as was the case in previous years. With a positive relationship between deprivation and childhood obesity, and also between educational attainment and deprivation, it is important to consider both the physical space available for growing food and the pressures faced when allocating time and money for growing, versus, say literacy.

Nelson *et al* (2011: 8) identified cost benefit for schools as a gap in research and the picture remains unclear. Any consideration of a business case would need to factor in the benefits of tackling individual, national and global challenges in terms of social and environmental economies. The business case for growing food in schools must include the benefits of tackling health issues such as rising and worryingly high child obesity rates at borough level. It should include the rising cost of a lack of nutritional understandings for several generations of parents and children influenced by consumerism and confused about food labelling. The case for health and wellbeing can only be alluded to here but is clearly critical with UNICEF rating the UK bottom of the league in 2011 out of 20 other OECD countries in a dynamic that combines materialism with inequality and wellbeing (Ipsos MORI and Nairn 2011).

Why then, are schools struggling to fund these activities with such proven wider benefits almost entirely by themselves? Some clarity around policies and pupil premiums in respect of this form of educational need is surely necessary. Clearly further research is also necessary to substantiate findings on benefits in the UK. Food growing enables children to relate to the world of which they are a part and to start to form a relationship with other living breathing organisms such as plants, as elements of the ecosystem. Understanding the natural world is one of the Rights of the Child, enshrined in the international United Nations (UN) Convention that it is all too often taught through books. Such understandings support Educating for Sustainable Development (ESD), another UN agenda. At an individual level, growing food improves nutritional understanding and changes what fruit and vegetables children are willing to try; at a global level it seeds the ground with skills and interest in food growing at an early age where

the future will necessitate sustainable food production and challenges of insufficient space for efficient food production. At the very least it begins the process of seeking to work with nature and unpredictability. This is as applicable to the adults involved as it is to the children. That parents value this approach can be discerned from the increase in farm school settings currently numbering over 100 (appendix 14), such as the Montessori eco-school in East Sussex <http://trefoilfarmschool.wordpress.com>.

8. Models and Sustainability

Several models for sustaining growing emerged from focus groups and interviews. These are outlined in the table below. In general they replicate relational tensions between educational ideologies, training opportunities and enterprise opportunities. Each of the characteristics operates on a spectrum and particular combinations create local models for a thriving growing community. Almost all schools function within a mixed strategy model where the level of risk is higher in terms of sustaining or maintaining growing, as those schools that have stopped growing or are restarting have commented. The practice based time inputs for sustainable growing involve teaching ('how to' and 'about'), physical maintenance, as well as valuing the organisation and liaison necessary for a flourishing educational activity.

Whole School Model (food centred)	Led by the headteacher, this is an enterprise model clarified from the case study school, similar to only a few others we know of nationally, but partly in operation in others, where growing and cooking food is central to the curriculum. In this model, all teaching staff fully engage in a creative cross-curricular approach that supports educational development and wellbeing. This hinges on shared understandings of values around food-growing and nutritional understandings, sustainability, relational understandings with the natural world, and requires a huge shift in transitioning practice for some and substantial redeployment of resources. It also requires funding and bid-writing activities and a holistic and creative approach to resources and opportunities (frequently including serendipitous benefits and gifts), that includes engaging with parents and the wider community, as well as outreach to communicate achievements. Educational understanding of active learning or learning by doing together with active thinking and Experiential Learning pedagogy, also feature.	
Mixed Strategy Model		The headteacher supports growing activities. These are an aspect, rather than central to the school. Growing is an adjunct and less integral to the curriculum.
	Paid staff model (a)	The headteacher is on board and funds a member of staff to support the growing activities.
	Paid staff model (b)	The headteacher supports but does not fund time for growing. The member of staff/or an external contractor needs to secure their own funding OR an external individual obtains/supports the funding for this at the school. Strategy is to hope that this will 'seed' recognition and valuing as at paid staff model (a).
	Volunteer/unpaid model	The headteacher may or may not support but does not fund time for growing. They may fund some part of growing, or may not but agree to use of space. Currently this is the largest category for food-growing schools. It is the fastest way to get growing started but it is also the most risky, as research indicates, often being dependent on a single individual and there are examples of this not working. Growing activities are carried out by volunteer teaching staff/parents/teaching assistants/some by children. Some models give a growing bed to each class. The success of the activity is underpinned with issues around competing and shared values, valuing growing and recognition of values and benefits of the work. Outreach, recognition and valuing recognition are essential.
Minimal Growing Model	Pupil-led	Pupils decide to bring growing to the school, or are facilitated to get the school growing. This model is very powerful in terms of outreach and it can change a whole school to become centred on ecological or on food-based activities, from the grass roots.
	Space Challenges	Some schools have no space and no growing activities for growing as a curriculum activity, with students growing a bean or cress, or a cress head. They would like to do more but lack a starting point.
	Value and Priority challenges	Some schools acknowledge growing as a curriculum activity, with students growing a bean or cress, or a cress head and do not wish to engage further. There are a number of issues around competing values and recognition of values and benefits of the work based on competing educational ideologies shared by both disadvantaged and privileged schools.

9. Outreach

One of the key aims of this project was to build and confirm the picture of what is happening on school grounds and disseminate that picture, sharing this information via networks, so it could be of use to inform funding as well as to support the work that other schools are doing.

9.1.1. Evaluations

In general, the events we held were highly appreciated by attendees. Those who filled out evaluations rated them as 5 or 4 on a Likert scale of 0-5 (with 0 as not interesting and 5 as very interesting).

9.1.2. Focus Group and Workshops

Most survey respondents were interested in creating wider local community networks and relationships. Feedback on evaluation forms from focus group participants was enthusiastic about how the event supported what they did, said it had been very interesting, they really appreciated the networking and felt we had offered valuable and inspirational information and was inspirational. Suggestions for improvement mainly related to time and content and a desire for more information.

9.1.3. Launch

The launch offered an opportunity for children to celebrate their work and to speak about why they feel growing food is important and to participate in discussions with funders, local council staff and teachers. There were not as many evaluations filled out as with registration and permissions done for photography and filming. Feedback from the launch event asked for detail on some presentations.

9.1.4. Impact and Dissemination

Working with schools supports growing food in schools and directly impacts on the 26,518 Primary age children in those schools. This is especially clear from local fundraising and curriculum support sessions. In addition the findings of the report via its further circulation will have extensive and far-reaching impacts influencing a more substantial number of the 8.2 million school-aged children across the UK. Ensuring peer review of the report and further dissemination of findings to funding and policy makers will increase the body of research available on food growing and should ensure further impacts.

While response data in the survey suggests the outreach extent of the food growing networks that had promoted it, with responses from different parts of the UK, conversely surprisingly few schools that responded belonged to any of those support groups. Indeed the number belonging to food growing groups overall was the same as that in each of the London boroughs (20%). This indicates the potential reach of the University of Greenwich's BIG Lottery survey to 80% of schools that do not usually access the growing food networks and funding opportunities established through growing food networks and it adds value to the picture in this report.

Direct communications with schools and individuals were effected by the following methods:

- Website with a tinyurl (<https://sites.google.com/site/growingfoodinschools/>)
- Replies to survey covering 26,518 children
- Emails about the survey and the project sent 3 times to all schools in the London Borough of Southwark and Royal Borough of Greenwich
- Emails sent out via University of Greenwich Early Years and Primary school networks
- Telephone contact and follow ups made with all schools in the London Borough of Southwark and Royal Borough of Greenwich
- Visits made to all schools in the Royal Borough of Greenwich and to most in London Borough of Southwark

- Working with schools during the project
- Attendance at focus groups
- Email invitation to launch sent to schools
- Peer reviewed report will be sent to all survey respondents and to all schools in both boroughs
- In addition, 40 flyers about focus group in print given to interested individuals at Charlton Manor Food Conference.

Direct communications with food-growing support organisations and local councils included meetings, attending events, emails, phone conversations and sending press releases about survey/project:

- Sustain
- Garden Organic
- Project Dirt
- RHS
- Eco schools / Keep Britain Tidy
- Growing Southwark
- Growing Greenwich (GCDA)
- Royal Borough of Greenwich Council
- London Borough of Southwark council
- London Borough of Lambeth
- SEEd
- Chris Collins (Blue Peter)
- SNUB Dulwich
- Sustainable Food cities (Greenwich)
- Peer reviewed report will be shared across our networks, contributing to national data gathering

Media Communications:

- Articles were published in print and online about the project by the following:
 - The University of Greenwich news channel (published)
 - Greenwich Mercury (published)
 - Lewisham Mercury (published)
 - Learning through Landscapes (published)
 - Environmental Association for Universities and Colleges (article published on website + tweets)
 - Food Growing Schools: London Project newsletter (published)
 - London Community Resource Network events newsletter (published)
 - Project Dirt (project profile + twice on PD front page twice: 1x for survey; 1 x for focus groups)
- Twitter
- Press release about survey/project sent to:
 - Garden Organic
 - Eco schools / Keep Britain Tidy
 - South London Press
 - Press release about focus group / project sent to:
 - News Shopper
 - Food Matters
 - Contacts working with schools to share with networks

10. Limitations and Recommendations

One of the benefits of this study is also a limit and that is the depth of qualitative research necessary to work to fully elucidate individual contexts and the ways in which these locally determine a mapping of how organisations and individuals relate to each other to support food growing. For the research to be useful to participants and other schools, this detail supports contextual understandings from which learning can be transferred from one environment to another, a process we observed at work in the focus groups. This report is limited in the scope of the

research it can present and it is anticipated that future publications will further support dissemination of detail. Study of the process of establishing and maintaining growing would also benefit from longitudinal case studies to track processes over time. Importantly, with similar methodological challenges to Forest School work, practitioner research into detailed relational understanding of the effects of food growing activities is needed. Due to the limits of the study, children's voices were not collected. We did not generate analytics for the website, which is a future recommendation.

This report calls for consideration of the work that schools are currently doing with respect to national health and wellbeing agendas, through the inclusion of food growing in funded government initiatives such as the school meals plan and other initiatives to support ongoing maintenance towards expertise in environmental and ecological curricula. It calls for more research to evaluate the benefits of food growing activities, especially their educational benefits since this directly affects how head teachers and teaching staff value such experiential activities within the curriculum. It calls for training to support staff, incorporating practice-based research, to raise standards and strengthen the agenda. It also suggests that this work might clarify and demonstrate values pertinent to children's education in Secondary as well as Primary schools and Early Years.

11. Conclusion

Taking forward and extending aspects of the 2012 Food Growing in Schools Taskforce Report (FGIS 2012) this research created and re-presented a picture of what is happening on the ground by assessing food growing needs, challenges, opportunities and successes around space, use, ownership, activity and maintenance, through survey responses, focus groups, interviews and dissemination. Disseminating information from the survey effectively aligned supportive information with needs identified, and facilitated access to collaborative opportunities within micro communities for those who did not know each other and shared a common interest. Attendees in the Southwark Focus Group were (mostly) relatively experienced while several in the Greenwich group were just starting up. Equally, advice from within the group and via our workshops further supported access to wider local networks. This was welcomed.

A significant initial finding is that 80% of respondent schools do not belong to nor access support available from food growing networks and organisations. Staff indicated they find this to be time consuming or do not have the time to invest. They also found aspects of monitoring overly bureaucratic and unwieldy. As such, the cost/benefit relationship frequently requires additional administrative facilitation to function well. If time was a challenge, so too was valuing growing. Staff engaged in growing activities voiced a lack of valuing and a lack of interest on the part of other staff and of the need for whole school leadership and engagement. Schools are busy environments with many competing priorities and would like support to develop the educational value of growing food. They are micro communities transitioning towards a more entrepreneurial way of working as a result of national education policy changes. As such, there is a need to incentivise and support this transition.

For growing to work well, schools need funding as well as staff development and creative curriculum development for growing, sustainability and to support eco-schools work. The cross-curricular potential of work linking these areas offers strategic motivation with real life applications for children's education. We found schools willing and working as they do, eager to do what is in the best interests of the children but time and staff interest are key challenges to growing. Anecdotes told of projects that had begun and failed. Reconceptualising time as an integral investment rather than an additional burden could be achieved through cross-curricular development with teaching staff to ensure growing food functions to support the curriculum. However, given the number of passionate volunteers, including a substantial population of 'environmental educators' in one borough, employing a dedicated member of staff as a specialist linking gardening and curriculum supported best practice for schools in terms of use of growing space for traditional gardening activities and also of embedding curriculum work inside the classroom.

We also found significant differences between the boroughs and between and within communities. Respondents in Greenwich indicate higher educational benefits than those in Southwark. Significant differences in valuing growing

as an educational tool apparent from survey data underpins different practices in individual schools influenced by ability and interest within schools, by leadership priorities and by different funding approaches operating within boroughs, including independent volunteering initiatives versus a more centralised approach in The Royal Borough of Greenwich through the GCDA.

The environmental case for growing food in schools involves tackling global issues at local level. Equally, the overarching business case involves tackling national social challenges at a local level, yet costs from implementation and resources to address this fall to school budgets within micro communities working together to educate. The challenge that the picture presents is one of mixed strategies and of complex national and global drivers in a period of transition for Western values.

Evidence demonstrates that growing food in schools impacts on individual children, and through them and their immediate families, can have a knock on effect on society as a whole. With wider potential financial implications for addressing costly current and future health, education and sustainability challenges, investment in growing food offers cost effective spending for UK government budgets. In addition, this comprises national actions towards external global values and policy drivers in which the UK as a whole does not score well. On the ground, it is extremely difficult for schools to cover food-growing costs, without completely rethinking the way that they operate and engaging in the process of learning to function in more entrepreneurial ways. The spaces they have are insufficient and therefore inefficient. Not all schools can do this and it requires more substantive political and financial incentivisation because time, money and leadership are needed for growing food to flourish effectively.

Every school should be a food-growing school, for the benefit of the children they educate. However, this report concludes that the maintenance and sustenance of growing food is complex and requires further research into both individual and wider benefits to support valuing of these initiatives, as well as training to support schools in new creative curricular approaches at a minimum, to complement mainstream funding activities.

11.1.1. **Beyond the Report**

In this report, I have discussed how wider contexts can enrich and support understandings of valuing growing food in schools. It is my intention to further analyse and present such contexts for the data we have collected, with the practical aim of enabling a more supportive funding environment to flourish. I believe further consideration of the business case for growing food in schools will lead to greater understanding of initiatives being more sustainable. Consideration of the ecological perspectives, both in environmental and social terms, as well as, for example, making connections between local know-how, knowledge about health and nutrition, political drivers, and how these link to global citizenship identities, will make drivers and ways of writing bids more available and transparent for schools. Finally, work on historical educational contexts and Experiential Learning pedagogies associated with school gardens and growing food, will stimulate development of creative curriculum. There is a useful role for universities to play in this. Equally, there is a need for detailed systematic research in this field and arguments for new methodologies, as much of the available data on education and pedagogy in respect of growing food, gardening and nutritional understandings is either based on opinions, like the benefits discussed in this report, or comes from the US.

12. References

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13. Appendices

13.1.1. Appendix 1: London Borough of Southwark and Royal Borough of Greenwich

The Royal Borough of Greenwich has 17 wards with 51 Councillors, and a Labour majority. One of the greenest boroughs, it is 25% parks and open land. At the 2011 census the estimated population was 254,557 on the basis of a 90.7% response rate, showing an 18.67 increase since 2001, the sixth highest in London. The quantity of open land lowers overall population density figures. 12 parks have Green Flag status and two community group sites hold the equivalent green pennant status (royalgreenwich.gov.uk).

The London Borough of Southwark comprises 21 wards. Labour currently hold 33 seats and the main opposition, Liberal Democrats, 25 seats (southwark.gov.uk). At the 2011 census the estimated population was 288,300 on the basis of an 87.4% response rate, showing a 12.3% increase on 2001. It has the ninth highest population density in London and in England and Wales, with 9,988 residents per square kilometre and 130 parks and open spaces that by 2012 had received 14 Green Flag awards (southwark.gov.uk).

Southwark offers a mixed picture of areas of affluence and deprivation. Comparative 2004 and 2007 Indices of multiple Deprivation (ID) figures show average general and specific improvement in relation to other boroughs in London and across England but detail of small areas (LSOAs) shows that 10% (16 areas) remain in the 10% most deprived in England while 6% are in the 10% least deprived. Over half (58%) LSOAs are in the 20% most deprived in England. Measures of income deprivation show 35% of LSOAs are in the most deprived domiciles in England for children living in income-deprived families. Southwark currently ranks 26th (out of 354) most deprived boroughs in England and 9th (of 33) in London. At 24th (of 354) Greenwich has slightly higher index of deprivation and a total of 130 deprived wards out of 143. Greenwich and Southwark have similar low-income status, with Southwark inequality considerably worse on pay and life expectancy. Both face very high levels of underage pregnancy and a lack of qualifications for school leavers. Child obesity levels are lower in Greenwich at 25%. Yet while deprivation indicators in Southwark have been generally improving, those in Greenwich have been worsening.

Southwark education information for 2005 shows 35,762 school children across the borough with two thirds being Primary school pupils of whom 14,162 receive free school meals. Ethnicity figures show 47.6 broad Black and Black British ethnic background and 34% broad White and White British ethnic background. Other groups comprised 4.8% Asian or Asian British, 1.3 % Chinese, 7.8 Mixed Background and 5.2 Any Other Ethnic Group. A breakdown of main ethnic identities shows 30% of all pupils identified as Black African, 26% as white British and 14% as Black Caribbean (London Borough of Southwark, 2006a; 2006b).

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Taking The Pulse - Your School, Your Say!

Consent

***1. 'Taking the Pulse' is an independent consultation to identify the specific needs of schools to start and maintain food growing activities. It is being undertaken by the University of Greenwich working with Growing Greenwich and Growing Southwark. For any questions about this survey, please contact Jennifer Patterson on J.J.Patterson@greenwich.ac.uk.**

CONSENT

- I have read the information about this evaluation.
- I have received a contact email to ask questions and discuss the evaluation if I so wish.
- I understand the survey is an evaluation of my experience of growing food in schools for the purpose of generating collaborative ideas about best practice.
- I understand all information will be anonymised except where I have chosen otherwise and that this is clearly indicated in the relevant questions (and is only with respect to these and not other questions) in relation to mapping and sharing information.
- I understand that I am free to withdraw from this study at any time without giving a reason for withdrawing (if I am, or intend to become, a student at the University of Greenwich) without affecting my future with the University without affecting any medical or nursing care I may be receiving.
- I understand that my consent is voluntary.

Have you read and understood the contents of this form and agree to participate in this study?

☐ Yes

☐ No

Page 1

Taking The Pulse - Your School, Your Say!

About Your School

2. What is the name of your school?

3. What type of school is it?

☐ Primary

☐ Secondary

☐ Independent

Other (please specify)

☐ Pupil Referral

☐ Special

☐ Nursery

4. Approximately, how many pupils are there in your school?

5. Approximately, what percentage of pupils have Free School Meals in your school?

6. Do you have food growing space at your school?

☐ Yes

☐ No

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Taking The Pulse - Your School, Your Say!

If you do not have food growing space at your school

7. Do pupils have access to a growing space outside of your school?

☐ Yes

☐ No

8. Would you welcome having access to a growing space near your school?

☐ Yes

☐ No

9. Do you grow food in tubs or on window sills at your school?

☐ Yes

☐ No

Page 3

Taking The Pulse - Your School, Your Say!

If you do have food growing space at your school

10. Roughly how much space are you using for growing food?

11. Roughly how big is your outdoor area as a whole?

12. Are there any site hazard problems (e.g. previous use)?

☐ Yes

☐ No

If yes, please describe these

Page 4

Taking The Pulse - Your School, Your Say!

Use

13. What sorts of edible plants and food do you grow?

14. How do you use the food you grow?

15. Does your school grow food more as...

☐ Part of your curriculum activities

☐ Part of afterschool gardening club

☐ Other (please specify)

16. What year groups grow food in your school?

17. Do the children...(tick all that apply)

☐ Prepare the ground

☐ Decide what seeds to plant

☐ Plant the seeds

☐ Tend the plants

☐ Harvest the food

☐ Prepare the food

☐ Eat the food

☐ Make compost

☐ N/a

18. What curriculum activities is growing food used for at your school? (tick all that apply)

☐ Literacy

☐ Numeracy

☐ Arts

☐ Sciences

☐ Other (please specify)

☐ Drawing

☐ History

☐ PSHE

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Taking The Pulse - Your School, Your Say!

Your Experience, Your Say

If you have food growing in your school, please respond in terms of your actual experiences.

If you have not, please base your responses on your understanding of the potential of food growing in your school.

19. In your school, who helps with growing food OR would need to be involved? (tick all that apply)

☐ Staff

☐ Parents

☐ Pupils

☐ Other (please specify)

☐ Caretaker

☐ Local community

☐ Voluntary organisations

20. In your school, what characterises and supports how growing works OR is needed to make growing happen? (tick all that apply and please add others)

☐ Staff interest

☐ Skills in gardening

☐ Time

☐ Willingness to give up classroom time

☐ Leadership

☐ Curriculum design

☐ Other (please specify)

☐ Internal support

☐ Funding support

☐ Understanding new sustainability policies

☐ Knowledge of plants

☐ Fit to school year

☐ Whole-school approach

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Taking The Pulse - Your School, Your Say!

21. In your school, what is needed to improve growing OR make it happen? (tick any that apply and please add others)

☐ Staff Development

☐ Skills in gardening

☐ Eco-schools project support

☐ Creative curriculum for growing food

☐ Creative curriculum for sustainability

☐ One-off workshops at school

☐ CPD opportunities locally

☐ Internal support

☐ Other (please specify)

☐ Funding support

☐ Understanding new sustainability policies

☐ Knowledge of plants

☐ Work around / fit to school year

☐ Support for whole-school approach

☐ Curriculum and healthy eating

☐ Bid writing workshops

22. What do you think are the main benefits OR potential benefits of growing food in schools? (please rank on a scale of 1-10 with 1 indicating a really small benefit and 10 indicating a huge benefit)

	small benefit	1	2	3	4	5	6	7	8	9	huge benefit
Skills in gardening	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improved motivation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wellbeing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improved in healthy eating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Horticultural skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Encourages learning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Raised science achievement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Strengthens community links	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

23. If you know of other benefits please state them and indicate their importance

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Taking The Pulse - Your School, Your Say!

Supporting You and Your School

24. Would you wish to have support for growing food, either on your own grounds or in a nearby location?

☐ Yes

☐ No

If no, please tell us why.

25. Are you aware that Ofsted favours growing food in schools, awarding good practice for this?

☐ Yes

☐ No

26. Are you aware that growing food links into the Government's sustainability agenda for schools?

☐ Yes

☐ No

27. Does your school have an 'Eco-Schools' award? (tick all that apply)

☐ No

☐ Bronze award

☐ Silver award

☐ Green flag award

☐ Energy award

28. Do you belong to any food growing organisations, such as Capital Growth, Growing Greenwich/Southwark, or Project Dirt?

☐ Yes

☐ No

If yes, please specify

29. Would you like support for working with your pupils' parents on a growing initiative?

☐ Yes

☐ No

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Taking The Pulse - Your School, Your Say!

30. Are you interested in creating wider local community networks and relationships for growing food?

☐ Yes
☐ No

31. Would you like fundraising ideas to support or develop your growing spaces?

☐ Yes
☐ No

32. What fundraising sources have you tried? (please indicate success)

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Taking The Pulse - Your School, Your Say!

Staying in Touch

33. Who should we contact in your school about growing food? (More than one contact is welcome. Please provide contact details where relevant.)

34. Are you (or others within your school) interested in participating in a café-style focus group with other local schools, as well as a free growing workshop?

☐ Yes
☐ No

If yes, please provide your contact email

35. If you would like us to add you to a map of growing spaces in your borough, then please indicate your postcode. You can also click on our homepage to add photos and details of what you do. This information will be available to participating schools and community organisations.

36. Are you happy for us to identify your school to individuals and organisations wishing to build relationships and support your growing needs?

☐ Yes
☐ No

Thank you very much for your time.

If you have any questions please contact:
 Dr. Jennifer Patterson
 Email: jj.patterson@gre.ac.uk
 Tel: 0208 331 8344

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13.1.3. Appendix 3: Curriculum Workshop sheets from Focus Groups

Carrot	Cabbage
Potato	Good King Henry
Artichoke	Tomato
Fat Hen	Bananas and plantains
Chayote/Christophine	
Orange	Turnips
Apple	Parsley
Sweetcorn	Marrows
Salsify	lettuces
Strawberry	Onions
Dandelion	Garlic
Fennel	Peppers
Onion	
Beetroot...sugar beet and mangelwurzel!	
Rice	
Barley	
Wheat	
Corn	

Vegetable Timeline, geography, maps, history, research and information; literacy, ICT, chopping...numbers

Starter Questions to expand into lessons:

Where in the world? Plot.

Started out where? China? India?

Christopher Columbus? Which ones?

Who is related? Vegetable families.

New world, Old world? Aztecs or Native Americans?

What did the Tudors eat?

Romans?

Middle Ages?

Ancient Egypt

Names in other languages?

What grows best where? Environmental conditions. Heat?


How does it grow? What leaf with which?

Your Notes:

Dr Jennifer Patterson


Email: j.j.patterson@gre.ac.uk

Vegetable Facts




Before the 17th Century, almost all carrots where **purple**


Carrots were used in 100BC as medicine long before described as a root veg




China is the leading producer of **potatoes** (not Ireland!)




Celery is believed to promote a good night sleep because of all the vitamins and minerals. It also is thought to have a calming effect on the central nervous system



Alan Sugar's first job was boiling **beetroot** for the local greengrocer!



The ancient Egyptians had a drink made from fermented **cucumber**




Not all **broccolis** are green. They can be sage in colour, or purple or a dark green and any shade in between those colours.

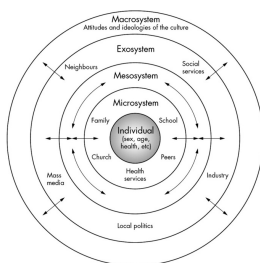
The first **orange carrot** didn't originate until the 16th century in Holland. Over the centuries a rainbow of different colours of carrot has appeared, including red, purple, black, yellow and white. Thanks to their orange pigment today's orange carrots have a potent dose of beta-carotene.

It is possible to turn your skin a shade of orange by over eating **orange carrots!**

British gunners in WWII were able to locate German planes using radar. The British didn't want the Germans to know about their great invention so spread the urban legend that their pilots increased night vision was due to massively increasing their consumption of **carrots**.

The largest **carrot** ever grown was 19pounds, grown by John Evans in 1998 in Palmer Alaska





<http://edpy200-kaileehorneyko.blogspot.co.uk/2012/02/bronfenbrenners-ecological-theory.html>

- Macrosystem: Social ideologies and cultural views
- Exosystem: indirect environments
- Mesosystem: connections between systems
- Microsystem: immediate environments
- Chronosystem: changes over time

The idea is to apply this thinking starting with the food or the activity, rather than the child, using this model.

For example: carrots

Individual: direct properties – nutrients, how it grows, leaves, roots, etc. Carroten – what is it?

Microsystem: What family? *Umbelliferae*. What grows with it? Immediate environment and growing conditions – what it needs as well as where it from.

Macrosystem – carrot culture and recipes, stories and facts. (WW2 rumours). Bugs Bunny.

Chronosystem – history and development: colour changes from purple and white to orange and movements – into other diets.

How many different aspects of curricula can you fit into a lesson or better still a project plan? Start with the idea, start small and expand.



With thanks to the Dharma School, Brighton. Art, storytelling and literacy – spellings and naming parts

Minecraft mathematics: Cubes and volumes: Calculations for filling a growing bed with soil, watering and planting. Idea is that this can be simple or complex, depending how you want to set it up. Also use for fractions.

- Work it out to scale on squared paper.
- Make 3D paper cubes to fit – maybe 10x10x10? (useful if cubes match distance between plants).
- Work out the volume of soil needed to make 1 layer – and to fill the box?
- Confirm on a growing bed – fill and check the volume.
- Problem solve – if x plants need to be x far apart and y plants need to be y distance apart and you want to grow x, y and z. How much room left for z and how many of x and y are needed, in x area - so how many in y area. After earth volume and planting spaces Calculate the water necessary? Cut and cube the veggies.

Fruit miles challenge: Maths, ICT, geography (seasons and sustainability). From home or in the supermarket children to either bring in a package or to find out where (different – ie: a range of) fruit in the supermarket comes from. See where they come from...plot on a map ...link to weather in different places ...calculate food miles... discuss pros and cons of seasonality and vitamins. Repeat in another season.

Punctuation Soup: pea stop and carrot commas; counting games; characters etc.

13.1.4. **Appendix 4: Funding Workshop sheets from Focus Group**

Funding Applications *Think about:*

Need – why is your project needed in your community/school?

Resources – what do you already have? What can you get for free? What in-kind support can you receive? Do you have any internal funding which you can use as match funding?

Costs – Capital Costs or Revenue Costs? Research, speak to schools that have done something similar, add 15% contingency.

Timeline – Map out what you want to achieve when.

Network - Who to involve? Partnership working makes an application stronger.

Maintenance & Sustainability of Project

How will you ensure your food-growing project will thrive for years, even after the funding has come to an end? Very important!

Monitoring and Evaluation

How do you evidence your project achieved what it set out to do? *Funders are keen to see outcomes, aims and impact thoroughly analysed.*

Crowd funding

Crowd funding gives you the platform to raise money online and generate support for individual projects and gives the crowd the opportunity to invest in an idea they believe in. Create a campaign and start raising money. Funds will only be released when the target is met. Backers will get their money back if the target isn't met. Fees are around 5% of the funds.

Crowd funding websites for community projects:

<http://www.spacehive.com>

<http://www.crowdfunder.co.uk>

On crowdfunder: People can pledge money to a project and in return will receive a reward. What could this be? Produce? Pupils' cards? Key to success: **Promotion!** How will you promote your project?

Repurposing, Salvaging and Enterprising

Getting Started

Keeping a project low cost might make all the difference to getting it started up. What resources and materials do you already have? Who can you ask to donate unused as well as new items? Local businesses? You can make planters from old tyres, a living wall with plastic milk jugs and a greenhouse from water bottles.

Free building materials are given away through this website: <http://recipro-uk.com>. Check it out for free timber, tiles and lots more. You can get free soil (pick-up only) by searching for it on <http://www.gumtree.com>.

Sustaining a project through enterprise

Cover running costs by growing to sell, teach pupils enterprising skills and make connections locally!

What produce can you sell? What plants? What products? Can you create seasonal events around your garden?

Check out the pdf file "Ideas for Fund-raising and Enterprise Projects" put together by the Royal Horticultural Society (RHS),

<http://apps.rhs.org.uk/schoolgardening/default.aspx> Support available for growing to sell:

http://www.sustainweb.org/localactiononfood/useful_links

Connect! Ask for support!

Food Growing Schools: London Project by Garden Organic: For support and sign-posting to all resources available for growing projects, email Gemma Squelch of Garden Organic on gsquelch@gardenorganic.org.uk

Capital Growth offers resources and practical support for growing in schools (<http://www.capitalgrowth.org>) and the RHS offers free starter packs, support and bench-marking (<http://www.rhs.org.uk/children/for-schools>)

The Jamie Oliver Foundation come to your school and offer support with food growing and healthy eating

www.jamieoliverfoodfoundation.org.uk

Sign up to Project Dirt – a networking site for environmental projects - to hear about new funding opportunities and connect with like-minded people; <http://www.projectdirt.com>.

List of grants

Grantnet - <http://www.grantnet.com/>

Comprehensive directory for grants in your area. Not available in every LEA, as councils have to buy into it (e.g. available in Greenwich, but not in Southwark).

<http://www.thealicemccoshtrust.org.uk>

Small grants for work or study related to natural history and/or the environment worldwide, such as field trips, expeditions or the development of new teaching materials. The Trust has a preference for applicants from Scotland, England and Turkey. Grants are between £600 and £1,000. Applications are accepted between 1 Oct and 30 Nov each year, decisions are made early following year.

<http://www.awardsforall.org.uk/index.html> Grants between £300 and £10,000 for activities that will benefit the community, including:

- putting on an event, activity or performance
- buying new equipment or materials
- running training courses
- setting up a pilot project or starting up a new group
- carrying out special repairs or conservation work
- paying expenses for volunteers, costs for sessional workers or professional fees
- transport costs.

B&Q - <http://www.diy.com/wastedonation>

B&Q donates unsalable products to community groups, charities and schools for projects that will benefit the local community.

<http://ernestcooktrust.org.uk/>

As well as offering a wide-ranging programme of land-based learning for children and young people, the Ernest Cook Trust gives grants to registered charities, schools and not-for-profit organisations wishing to encourage young people's interest either in the countryside and the environment or the arts (in the broadest sense) or aiming to raise levels of literacy and numeracy. A large grants programme for awards of over £4,000 and a small grants programme for awards of under £4,000 operate throughout the year.

Grow Wild Community Site Funding - www.growwilduk.com

Funding is available to develop places where local people use UK native plants to create a space for everyone to enjoy by giving neglected and uncared-for sites and spaces a new lease of life. Small grants application deadline has just passed for 2014 but you can still apply to become a flagship site.

London Mayor Pocket Parks Programme <http://www.london.gov.uk/priorities/environment/greening-london/improving-londons-parks-green-spaces/pocket-parks>

Grants between £5,000 and £20,000 to turn unused green spaces into parks for the community. Capital grants. Requires 100% match funding. Applications will close at 5pm on 10 March 2014.

Orchard Windfalls - <http://www.treecouncil.org.uk/grants/orchard-windfalls>

Grants are available for orchard planting projects in school or community grounds in the UK. Grants available of between £100 and £700. The deadline for applications is 31 March 2014.

Partnership grants - <http://royalsociety.org/education/partnership/>

If you have a great idea for bringing science to life in schools, this scheme helps schools to run exciting and innovative projects in partnership with a professional scientist or engineer. The Partnership Grants scheme provides grants of up to £3,000 for science projects run at a primary or secondary school or college in partnership with a professional scientist or engineer.

Waitrose Community Matters Each month, every Waitrose store has £1,000 to divide between three local organisations. Contact your local branch for more details. To find your local branch go to http://www.waitrose.com/content/waitrose/en/bf_home/bf.html

Woodland Trust - <http://www.woodlandtrust.org.uk/plant-trees/in-your-community/>

Woodland Trust gives tree planting packs ranging from 30 to 420 saplings for schools and groups to plant more trees, hedges and copses in their local shared spaces. Autumn planting application ends 4 Sept 2014.

Greenwich only: Greenwich Pride Grant - <http://www.greenwich.gov.uk> Small grants to local voluntary and charitable organisations, schools, residents and businesses for projects that improve the local environment within the London borough of Greenwich. Grants of between £50 and £1,500. Costs of capital equipment purchase, labour and any other costs directly associated with the project.

14. Resources

Curriculum: Growing Schools <http://www.growingschools.org.uk/>

Weekly growing activities: http://www.gardenorganic.org.uk/schools_organic_network/thisweek.php

Chickens Toolkit: Under the Free School Meals Programme, Southwark has developed a Toolkit on their website that information on growing food and keeping chickens with links to the Growing Schools and Garden Organic Websites for support (http://www.southwark.gov.uk/info/200326/free_school_meals_programme).

Case Studies: Publically Available Case Studies of Food Growing in Schools Activity (Nelson *et al*, 2011: 102-108)

School Farms Network: http://www.farmgarden.org.uk/index.php?option=com_content&task=view&id=28

WEBSITES AND ORGANISATIONS

Garden Organic <http://www.gardenorganic.org.uk/> is a national charity that recognises the interconnections of living things and aims therefore to get as many people as possible growing organically. Their website offers a number of resources including downloads of growing cards, activities and games. They also have specific resources for schools (<http://www.gardenorganic.org.uk/organicgardening/schools-resources.php> including seeds for KS2). Garden Organic is the lead partner in the Every School a Food Growing School: London Project funded by the Big Lottery Fund with SUSTAIN, the RHS, the Food for Life Partnership, the GLA and Morrisons. The Food for Life Partnership is a network of schools and communities across England committed to transforming food culture. (<http://www.foodforlife.org.uk/>) Garden Organic offer teachers training courses on use of the garden for curriculum. Their main aim is to see fresh, seasonal produce that has been grown using organic methods in or near the school grounds to be used for cooking sessions and in school meals and aim to be responsible for getting local schools to set up and maintain a school garden. Garden Organic also offer schools the opportunity to visit Ryton Gardens in Warwickshire, to learn how to improve their own school gardens. Most of Garden Organics funding comes from donations and legacy gifts from members, sales from the online shop and volunteers.

Royal Horticultural Society (RHS) <http://www.rhs.org.uk> is the UK's leading gardening charity, with a long history stretching back over 200 years and the Queen as their patron. The overarching aim of the charity is to promote good gardening. They seek to inspire people to garden, and to get children learning to grow plants, and believe that everyone can do this. The RHS has a lot of resources for children and it runs the Campaign for School Gardens (<http://www.rhs.org.uk/Children/For-schools>) with monthly growing updates and links to recipes and information on food growing. One of the RHS' aims is to encourage all schools to sign up to growing food. Registration is free and in return, the RHS provides the school with a start-up kit, rewards and certificates for progressing through the scheme, information and advice and a regular magazine with tips and free seeds each year. Schools can visit all four RHS gardens for free. This is an ideal way to kick-start a child's enthusiasm and curiosity about gardening and shows them what they can grow, as there is such a huge range in plant diversity in the gardens. Britain has some of the best gardens in the world; however the younger generation need to learn to grow so that Britain can continue to have great gardens. The RHS website is full of useful, practical information on growing. Their print magazine has been described as the best garden magazine in the world with expert, gold-standard advice. The RHS obtain approximately a quarter of their funding from members' subscriptions. The charity is also funded by donations, legacies, sponsorship and volunteer work.

SUSTAIN <http://www.sustainweb.org/> is a network organisation that campaigns for a healthy, sustainable and ethical food system. They are a registered charity initially formed by merging The National Food Alliance and the Sustainable Agriculture Food and Environment (SAFE) Alliance. The current membership is an alliance of roughly 100 local, national and international public interest organisations that meet annually to elect trustees and a chair. They employ project staff and volunteers. Sustain runs campaigns for encouraging and promoting healthy, ethical and sustainable food sources. One such campaign is 'the big dig' aiming to get people to grow their own at local community gardens. Sustain runs Capital Growth, Capital Bee and The Children's food Campaign (<http://www.sustainweb.org/childrensfoodcampaign>). The aims of the latter include good food and real food education in schools, to protecting children from junk food marketing and get better and more consistent food labelling across the board so that everyone can understand the sugar, salt and fat content. They seek to make everyone, particularly children more conscious of what they are eating. Sustain is funded through grants from charitable foundations and government sources. Memberships and subscriptions and sales from publications (*The Jellied Eel*) also contribute. The alliance also earns money by taking on work to further the alliance's purpose.

Project Dirt <http://www.projectdirt.com/> is an active network and resource for community and environmental projects, with information on up to date funding initiatives. It is a useful resource for schools starting a school garden to access information about funding and volunteers and to connect with local people that would be able and qualified to help. An award winning environmental social media network it connects people, communities and businesses who are doing and interested in green projects. There are fora where like-minded people can discuss gardening projects. The site is based on people wanting to volunteer and networks people who are willing and wanting to help, with those that need it. Project Dirt get their funding from fees paid by companies. Companies and organisations pay a fee to take a "cluster" network. The fee depends on the size and sector of the user and whether you want a managed service from Project Dirt.