



Take Home Messages on Sustainable Food: Surveying Parent Perceptions of the Effects of a Primary School Programme

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Authors' contributions

This work was carried out in collaboration between all authors. Author DS was responsible for the field work, data collection, statistical analysis and co-authored final manuscript. Author MJ was responsible for study design, data collection, literature review and co-authored final manuscript. Authors EW, RK and JO (Principal Investigator) undertook data collection and commented on all drafts of the final manuscript. All authors read and approved the final manuscript.

Research Article

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ABSTRACT

Aims: Parents are important stakeholders in school-based health promotion programmes. This study aimed to understand the perceptions of parents of a primary school-based healthy and sustainable food programme. It specifically sought to examine the perceived effects of the programme on the home environment and on parental engagement with schools.

Study Design: A cross-sectional parent survey and a before-and-after school activity survey.

Place and Duration of Study: Primary schools in England taking part in the Food for Life Partnership programme, between January 2008 and January 2011.

Methodology: In 35 schools a pre-programme enrolment survey on parental involvement was completed and repeated at 18-24 months. In the same schools 740 parents responded to a cross-sectional survey on perceptions and effects of sustainable food education.

Results: Parental involvement increased across a number of areas of food-related school

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activities. Parental respondents were active in school harvest celebrations (42%), cooking events (37%) and homemade food events (33%). Parents reported raised interest of their child in food origins, fair trade foods, organic foods, animal welfare, food packaging and food miles. 40% reported their children talked more about new fruit and vegetables in family discussions. 43% reported changes in buying patterns and 45% reported they were eating more vegetables. Reported changes in home food consumption included: more seasonal food (33%), more locally sourced food (26%), more fair trade food (25%), more free range eggs (25%), and more organic food (11%). Under 5% of parents raised reservations connected to the affordability of sustainable foods and the relevance of the programme to educational goals.

Conclusion: Parents perceived programme-related effects on their family including discussion and purchases of healthier sustainably sourced foods. Health promotion programmes can enhance their impact and sustainability through reinforcing the processes by which parents become engaged and can adopt programme messages in the home environment.

Keywords: Health promotion; food sustainability; cooking; gardening; farming; fair trade; animal welfare; organic food.

1. INTRODUCTION

Parental engagement and impact on the home environment are important goals for many schools-based health promotion and behaviour change programmes [1]. This is particularly the case in food, diet and nutrition based initiatives where the parental buy-in and the domestic context are a central focus [2]. However, relatively little research has been concerned with parental perceptions of such initiatives. This paper reports on a before-and-after school survey and a cross-sectional parental survey of primary schools taking part in the Food for Life Partnership 'flagship' programme.

Parental involvement in children's schooling is associated with better educational outcomes for their children [3,4,5] and can produce benefits for the entire school community [4]. Karther and Lowden [6] reported gains in student attainment, increased parent self-confidence and satisfaction with schools, and overall school improvement as benefits of parental involvement. Moreover parents are also a key influence on their children's diets and general health, and they can have an effect that over-rides school influences in primary school settings [7,8,9,10,11].

Parental involvement is therefore perceived to be a highly important element of school-based health promotion programmes [5,10] especially those that seek changes in the home environment. The National Institute for Health and Clinical Excellence guidelines [13] for dietary interventions in school settings state that "where possible, parents should be involved in school-based interventions through, for example, special events, newsletters and information about lunch menus and after-school activities".

However, there are wide number of barriers to successful involvement. Garcia-Dominic et al's [14] review of studies found that key reported obstacles to involvement in schools included, but were not limited to, "transportation, negative attitudes toward or bad experience with schools, cultural or language barriers, economic and/or time constraints, parents' inflexible work, schools, blaming parents for their children's difficulties in school, parents'

negative attitudes toward the school or vice versa, unmatched expectations between school's policy and practices and parents' concepts of parental involvement and the school's inability to adapt to societal change" [14 p:703]. Such barriers may be exacerbated by socio-economic disadvantage, although this has been a matter of some debate [15].

Even when there is parental involvement in the design of the initiative, involvement can tail off over the duration of a programme's implementation [16] or simply may not be forthcoming from the outset [17]. Story et al [17] have concluded that "finding effective and feasible ways to involve a large number of families remains a major challenge in school-based health promotion intervention programs" [17 p:199]. According to Sallis and Glanz [18] difficulties associated with the development of effective strategies and methodological issues in research have meant that there is a lack of evidence that schools based programmes influence children's eating habits at home.

We should note that there are different types of parental involvement, each with potentially very different sorts of outcomes. Feuerstein's study [19] characterised a range of variables that were associated with involvement, although he concluded that many school-level variables do not easily influence the home environment. Moreover parents are by no means a homogeneous group, given that families and households have a variety of parental and care arrangements, differing age and gender profiles of children as well as other socio-demographic variables associated with parents, guardians and carers. For simplicity, this paper uses the term 'parents' to include adults who have a parenting or major care responsibility for a child in a school setting.

The aim of the study was to understand the perceptions of parents of primary school children participating on a schools-based healthy and sustainable food programme called the 'Food for Life Partnership' (FFLP). We specifically sought to examine the perceived effects of the programme on the home environment and how the initiative affected parental engagement with schools.

2. INTERVENTION AND METHODS

2.1 Food for Life Partnership Programme

The Food for Life Partnership is an England-wide scheme that consists of a group of charities that aim to promote food-based learning in schools. The initiative evolved out of a concern that obesity and the climate change impact of food cannot be addressed unless "individuals and communities are reconnected to how their food is produced, and regain the skills and knowledge needed to take active control over what they eat" [20]. FFLP organises its work with schools around four strands:

1. Food leadership: promoting food reform through an action group with student, teacher, catering staff and parent representatives.
2. Food quality and provenance: working with school meal caterers to procure more local, seasonal, organic, marine stewardship council and higher welfare school meals.
3. Food education: reforming practical food education, particularly with regard to raising issues of environmental and social sustainability through gardening, cooking, visits to farms and local food producers and classroom projects.

4. Food culture and community involvement: engaging with parents and the wider community on the use of healthier and more sustainably sourced food in school and at home.

Schools are encouraged to work towards Bronze, Silver and Gold FFLP Mark awards based upon criteria in each strand. In the period 2008-2011, over 3600 primary, secondary and special schools signed up to take part in the programme. All received printed and online resources and tailored support in the form of, for example, brokering links with local farms that could host educational visits. This paper concentrates on a sub-group of FFLP 'flagship' primary schools that received enhanced levels of support in the form of 18 months of bi-weekly contacts with FFLP officers for training, advice and mentoring. These schools were also entitled to approximately £1500 to help fund trips, equipment and events for the programme.

2.2 Methods

2.2.1 Study design

The study design consisted of two elements: a before-and-after survey of nominated lead teachers assessing parental related activities in participating schools, and a cross sectional survey of parents. Research on the perspectives of students and non-teaching school staff is reported elsewhere [21,22].

2.2.2 Before-and-after school survey: sampling and recruitment

75 primary schools enrolled with the FFLP flagship programme during the research period 2008-2011. Using the enrolment list, we contacted those schools listed as an odd number to participate in the study. This represented just over half the schools (38). The list-based sampling approach reduced the risk of bias in the selection process. Of the 38 contacted, 35 agreed to participate in the study. Each school participating in the FFLP programme had a nominated lead teacher. These teachers were asked to complete a questionnaire on a number of aspects of parent and wider community involvement in their schools. This information was collected on enrolment with the FFLP programme and after 18-24 months participation in the programme. On both occasions, lead teachers were asked to provide supporting evidence based upon their programme monitoring file and school office records.

2.2.3 Cross-sectional parent survey: sampling and recruitment

The parent survey was conducted in the same 35 primary schools as the before-and-after survey. The survey took place after 18-24 months participation in the FFLP programme. Participation of parents of children in three classes for each school – selected in liaison with the lead teacher was obtained. On average 75 questionnaires were distributed per school, although this number varied according to the class size. A second wave of reminders and questionnaires were sent out in order to obtain a minimum of 24 responses per school. The average number of completions was 21 with a range of 10 to 38. Low returns (10-16) for four schools reflected the small pupil roll (under 100). Low response rates from other schools may be associated with the high level of consultation requests in these settings. Data from OFSTED (the official body for inspecting schools in the UK) suggests that survey response rates from parents are consistently low in schools, so this was not an issue specific to this study [23].

2.2.4 Parent questionnaire measures, topics, development and analysis

Questions focused on perceptions of school meals; school food improvement; children’s involvement in FFLP activities; the impact of FFLP on discussions at home; and subsequent food choices and shopping behaviours. Open ended questions covering the same areas allowed respondents to provide additional written comments. The questionnaire was developed through interviews and piloting with 12 parents in six of the study schools 12 months before the administration of the survey. The measures were bespoke to the study, although the format drew upon the national Low Income Diet and Nutrition Survey [22]. Quantitative data were analysed using SPSSv.17. All written data were transcribed and analysed thematically [23].

3. RESULTS

3.1 Before-and-after School Survey: School Engagement with Parents

Comparison between pre-enrolment and post-enrolment periods shows that schools considerably increased their engagement with parents across a number of indicators (Fig. 1).

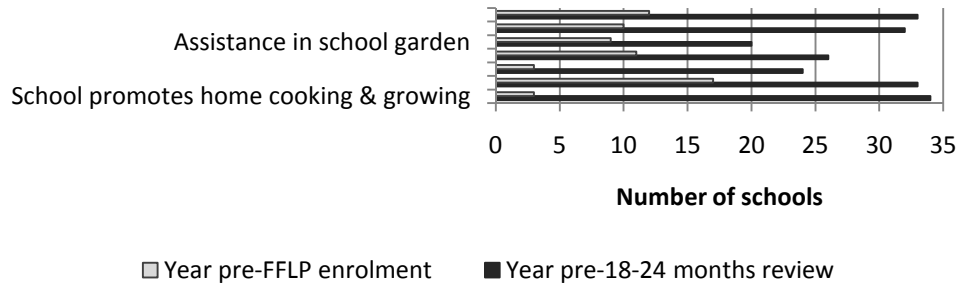


Fig. 1. School reports on parental engagement (N=35 schools)

3.2 Parent Respondents: Child Profile

In total 740 parents completed questionnaires. Parents reported the ages of their children; this was to establish that parents with children across all Year groups were included. Parents were asked to state the ages of their first, second and third children. The age profile of the first child were: Reception (2%), Years One (7%), Two (10%), Three (13%), Four (17%), Five (27%) and Six (22%). The final 2% were missing data or reports of older first children at secondary school. In terms of gender, 47.7% of the first children were boys and 51.2% were girls with missing data on the remaining 1.1%.

3.3 Parental Awareness and Involvement in School Food Activities

81% of respondents said they had heard of the Food for Life Programme prior to the questionnaire, 19% said they had not. Within the survey parents described a number of different types of involvement in school life particularly related to the aims of the programme. These included harvest celebrations (42%), cooking events such as barbecues (37%), food festivals (14%) and food related activities such as events with homemade food (33%). Often

events were connected to growing, with 32% of parents' surveyed attending school gardening sessions, or evening taster sessions where school produce and school meal menus were the focus. While this may suggest food-related activities constituted a significant route for involvement, 77.5% of respondents also reported involvement in other school activities such as sports day or drama performances in the last year. These results are outlined in Table 1.

Table 1. Parental involvement in school related activities

	Number of respondents (n=740)	% of total respondents
Harvest celebrations	310	42
Barbecues	274	37
Food festivals	104	14
Events with homemade food	244	33
School gardening sessions	237	32
Involvement in other types of school activities not related to food	570	77

**Parents could identify more than one activity; therefore percentages do not total 100*

3.4 Perceptions of School Meals

Parents were asked 'over the last year, has your child had school meals'? All parents responded to this, with 44% of the sample reporting that their child had school dinners every day, or nearly every day. An additional 41% also reported their child had dinners on some days of the week or sometimes, only 15% reported that their child never had school dinners. 11% reported free school meal take up, but data were missing for 14.7% of the sample. Parents were asked questions about the level of consultation they had received both in relation to school meals and food issues across the school more generally. The majority of parents (61%) reported that they had been consulted about school dinners, 27% said they had not, 11% could not remember or did not know. Most parents also felt they had been consulted more generally (67%), 24% said they had not, 8% did not know and non-responses made up 1%.

Parents were also asked to assess the quality of school meals and the degree to which they had improved over the previous twelve months. The results highlighted in Table 2 demonstrate there was a positive perception of school meal quality and levels of improvement with over 82 % of parents surveyed reporting school meals as either excellent or good.

Table 2. Parental views on the quality of school meals in the last year

Quality of meals	Frequency of response	Percentage of total sample
Excellent	222	30
Good	385	52
Neither good or bad	96	13
Poor	22	3
Very poor	8	1
No response	7	1
Total	740	100

As highlighted in Table 3 for the majority of respondents, there was marked improvement over the last year (60%) and for some (13%) that the improvement was very significant. Parents were less positive about the degree to which the school dining area had improved with 51% reporting that it had stayed the same or become slightly worse. Nevertheless, 40% did report improvements, with a significant percentage (8%) reporting dramatic improvements over all.

Table 3. Parental views on school meal improvement in the last year?"

Change in school meals	Frequency of response	Percentage of total sample
Improved enormously	96	13
Got better	350	47
Stayed the same	221	30
Got worse	19	3
No response	54	7
Total	740	100

3.5 Children’s Involvement in School Based Food Related Activity

In relation to parental perception of children’s involvement with food related activities associated with the FFLP, most parents (77%) reported knowing that their children were involved. As a result of this involvement parents were asked about whether their child had raised discussions about healthier food choices at home with other family members. There was a strong endorsement to this question with 77% reporting that they had. Forty two per cent reported this was focused on the issue of fair-trade and 27% locally grown food. Some children had been able to connect this with the concept of food miles with 15% of parents reporting this had been discussed at home as a consequence of the programme. A key element of the programme was the development of food culture that encouraged children to cook and try new foods. Although this had often happened at school as part of the programmed activities, a number of parents (40%) reported their children were also becoming more adventurous at home, talking about new fruit and vegetables in family discussions. This extended to an interest in shopping with 21% reporting that their children were more interested in local shopping, including where food came from, and animal welfare. Twenty five per cent of parents reported that their child had raised the issue of organic food and 23% highlighted free range eggs as something specific that had been discussed. In terms of the environment, 20% of parents reported their children had raised the issue of food packaging and its negative environmental impact.

3.6 Content and Perceived Impact of Parent-Child Discussions

Cooking was a dominant area of reported conversation, in particular trying out new recipes and excitement about the development of new skills. Seventy two per cent of parents reported conversations at home on this topic alongside sharing of experiences of growing fruits and vegetables (75%). The degree to which the children’s involvement in FFLP and subsequent family discussions resulted in changes in eating behaviour were also a focus of the evaluation. Parents were asked to rate the degree to which they ate more, the same or less of particular food types. These included: organic, seasonal, fair-trade, and locally produced food. In addition parents were asked about changes in relation to the consumption of free range eggs and organic meat. Table 4 highlights parents’ self-reported increases in buying seasonal, locally grown and fair trade foods. 25% of parents also said they were

buying more free range eggs, though reported a smaller increase in organic meat purchases. Interestingly there was a much higher non-response rate to this question. These non-responders were also less likely to report that they were aware of the FFLP programme in their school. As demonstrated above the numbers of parents buying less of the identified food groups since the programme introduction were very low.

Table 4. Parental perception of changes in sustainable food consumption

Type of food	More	Same	Less	No response
Organic food	81 (11%)	511 (69%)	22 (3%)	126 (17%)
Seasonal food	244 (33%)	444(60%)	0 (0%)	52(7%)
Fair trade food	185 (25%)	437(59%)	7 (1%)	111 (15%)
Local food	193 (26%)	459(62 %)	7 (1%)	81 (11)
Free range eggs	185 (25%)	474 (64%)	7 (1%)	74(10%)
Organic meat	52(7%)	511 (69%)	22 (3%)	155 (21%)

Parents were also asked to complete a five point Likert scale against a number of statements connected to their perception of how their child’s involvement had changed family knowledge, attitudes and behaviours around a number of key areas. These areas included school involvement; cooking from scratch; growing; attitudes to food, food buying and consumption. Table 5 below summarises the main findings from the 740 parents who took part. From a parental perspective children’s involvement in the project had resulted in take home messages that influenced food culture at home. For example, children’s discussions had influenced cooking and food consumption with 38% reporting that they either strongly agreed or agreed with a statement suggesting family attitudes to food had changed. In addition, 43% reported changes in buying patterns and 45% reported eating more vegetables as a result of FFLP. For many (53%) these increases were also connected to learning more about growing fruit and vegetables.

3.7 Perceived Home Impact: Written Responses

Many parents (60%) completed the open-ended section of the questionnaire in some depth. Content analysis identified the following categories: radical impact of FFLP on family decision making; take home messages that directly influenced others; impact of take home message on family members; positive impact on family and child’s attitudes and behaviour; an increase in the number of family related food activities taking place; no impact and those who felt that FFLP had a positive impact with some reservations. These are summarised in Table 6.

Table 5. Parental perception of changes in school involvement, growing, cooking and food purchasing N=740

“As a result of my child’s involvement with Food for Life we have...”	Strongly agree (n) (%)	Agree (n) (%)	Neither (n) (%)	Disagree (n) (%)	Strongly disagree (n) (%)	No response (n) (%)
Got more involved in school life	67(9)	177(24)	370 (50)	67(9)	15(2)	44(6)
Learned more about cooking from scratch	96(13)	296(40)	222(30)	74(10)	22(3)	30(4)
Learned more about growing fruit & vegetables	96(13)	296(40)	222(30)	74(10)	22(3)	30(4)
Changed some of the foods we buy	67(9)	259(35)	252(34)	81(11)	22(3)	59(8)
Changed our family attitudes to food	52(7)	230(31)	296(40)	81(11)	22(3)	59(8)
Eaten more fruit and vegetables	81(11)	252(34)	274(37)	74(10)	22(3)	37(5)
Not changed our level of involvement in school life	52(7)	170(23)	259 (35)	118(16)	30(4)	111(15)

Figures over .5 were subject to rounding up and under.5 down

Table 6. Parent perceptions of take home influences: content analysis themes for written responses

Theme based on content analysis	Examples of the types of issues raised	Frequency (n=740) & percentage
Radical impact on family decision making	Strongly reported changes, for example, in family food purchases, healthier choices. Increased family involvement in buying or choosing foods	11 (1.5%)
Take home message directly impacted on others	Child reported to have directly influenced others. Examples provided.	9 (1%)
Positive impact on family and child's attitudes and behaviour	Some changes in child or family attitudes to food, some possible changes to behaviour. For example child more willing to try varied or new foods, cooking or growing at home.	286 (39%)
Positive impact on family activities	More practice of cooking or growing at home as a result of FFLP or involvement in shopping. More parental involvement or connection with school.	56 (8%)
No impact (positive, negative and neutral)	No negative comments. No example of behaviour or attitude change given. No specific evaluative comment, but general positive comment about the programme overall	73 (10%)
Positive with reservation(s)	Positive but negative aspects reported such as the affordability of organic foods.	6 (1%)
No comment or not applicable	Nothing written	299 (40%)
Total		740 (100%)

The most common theme was connected to parental reports of the positive impact on family and child attitudes and behaviour as a result of the FFLP. Parents focused in particular on an increased interest in food that included trying new foods and attempts to cook as the following reports demonstrate:

"My child has shown more interest in cooking at home and is now more understanding as to why we choose to cook from scratch. Also [she asks about] why we choose foods with less air miles, so although it has not changed our way of cooking it has changed her attitude". (Q 84:15)

In some instances the ability of children to influence family discussions about food was felt to lead to changes in parental buying, growing and food preparation behaviour. At home children had articulated strong views about the importance and implications of buying fair trade, free range products and the consequences of excessive packaging on the environment:

"My child now tells me to buy more fair trade and free range products which I am happy to do. She also tells me what ingredients she wants me to buy for things she likes to cook". (Q 57:04)

For a minority of parents this had led to radical and significant changes in life style. As a result of the discussions children initiated at home parents identified becoming more aware and more proactive around food in their relationships with their children. In the following quotes parents illustrate this with, instances of regular meal planning; discussions about shopping and reductions in convenience food consumption:

"Every Sunday we discuss which meals to have for the following week so I can compose a shopping list. My son has used his knowledge from school to help with this and make suggestions in relation to vegetables and healthy dishes such as vegetable lasagne and pasta dishes". (Q 73:06).

However, alongside positive comments a number of parents raised reservations, connected to issues of affordability:

"My children each make one meal per week and usually decide what ingredients they need. However, as a single parent on a low income, I feel it is important for them to use what is available at home and be creative". (Q 49:11).

For a small number of parents although their children had enjoyed the school activities it was difficult to determine the impact of the programme. Others were more critical suggesting that the programme was a distraction from more important learning, or that the messages communicated were inappropriate. Some parents were particularly concerned about healthy eating messages, particularly around their daughters and the consumption of saturated fat.

4. DISCUSSION

Data from parents indicated a high level of awareness of the programme. These parents reported significant impact on discussions at home around the activities children had been involved with and the learning that had taken place. These had focused on the core aspects of the programme connected to food production and preparation, healthy eating, school food culture and the environment. In a significant number of families these discussions had

resulted in raised family awareness and changes in patterns of purchasing and consumption. Parents also reported that their children were now trying more new foods and were more enthusiastic about cooking and growing at home. Children wanted to practise the skills they had learnt at school with other family members, for some children this extended to active engagement with family shopping and menu planning. The before-and-after school survey broadly supported the findings from the parental survey.

Given the challenge of generating change in food and health behaviours across home school boundaries, the FFLP programme did appear to create increased opportunities for families to discuss food, its relationship to family health and developed innovative ways of improving food related behaviours and activities in home settings. These findings demonstrate from a parental perspective that there were behavioural outcomes that could be attributed to the programme. There are a number of routes through which the programme could influence food related practices in the home environment; some key processes are likely to include:

1. Children raised awareness at home and motivated families to change shopping and cooking habits.
2. Children practised their practical food learning with relatives at home.
3. Fuller engagement with parents on school food issues and school meal improvements helped set an agenda for change for families and the wider local community.
4. School events with parents and the local community offered direct experiences for growing, purchasing and cooking healthier and sustainable foods.

School health promotion literature has highlighted the importance of understanding the social context of parental engagement [14,15]. This is particularly important when messages raise complexity or dilemmas for their recipients. Our study indicates that children conveyed ideas home about eating more healthily and sustainably. However, some parents were concerned about the impact on their shopping budget and family cooking routines. This raises issues for programme developers about how to create programmes that can flexibly engage children in school contexts but also within their family and community contexts. There are particular challenges for schools in areas of high socio-economic disadvantage and for low income families.

Parents clearly saw the connection between food-based activities, children's wellbeing and wider educational goals in primary school settings. Perceptions of these links form an important mandate for programme developers and for policy makers seeking to embed public health and social citizenship activities into mainstream schools. However, the study also suggests the need for more strategic and theoretically informed school-home communications in order to develop two-way dialogue and for the positive reinforcement of messages. It is possible parental reporting of outcomes can be improved when parents, a sub-group within this population, are clearly identified as target audiences alongside their children [17].

Further work is also required for researchers to develop robust methods for assessing the impact of health promotion programmes on parents and the home environment [18]. To aid greater adoption they also need to be resource-efficient and operable at small scale to be

accommodated into routine evaluations. There is a need for longer term evaluations given the challenge of maintaining sustained parental engagement over time [16].

A number of limitations of the study need to be considered. Only the parents of selected class groups were approached to participate in the study. Although the programme was directed at the whole school community, it is possible that the recruitment approach could have captured a wider range of parent and carer perspectives within participating schools. Capturing more detailed data about the characteristics of the participating parents would have supported a more rigorous analysis of possible influences on parent's perceptions; unfortunately this was not possible, so remains a limitation of the research. The use of a single questionnaire per household is likely to mask differences of view between parents and to obscure the perspectives of other household members with a role in dietary practices. In addition, parents who completed the survey were possibly more inclined to be sympathetic to the programme's aims. Consequently these data may not fully reflect negative or disengaged views. To off-set this possibility, the questionnaires were administered independently from the programme team and parents posted their returns directly to the researchers – avoiding the use of the school as intermediary.

5. CONCLUSION

Health promotion programmes are likely to enhance their reach and impact through parental communications either directly or through children. Programmes also embed action through formal and informal school activities in which parents have a significant role. Parental engagement can provide a mandate and help provide feedback on the role of health and wellbeing initiatives in supporting core educational goals, such as raising attainment. This is particularly important for initiatives, such as those concerned with food, diet and nutrition, where there are direct implications for the home environment – as well as the school setting. For food sustainability programmes, additional challenges exist with regard to the complexity and ambition of the objectives and the social and economic implications for households.

CONSENT

School head teachers were asked to give written consent based upon written and verbal information provided by the researchers. Children were asked to take home a sealed questionnaire to their parents or carers. This included information on the study, assurance of the voluntary nature of participation, confidentiality of responses and anonymity of data management. Parents returned questionnaires via a stamped addressed envelope directly to the University, and not via the school. Respondents were offered the opportunity to enter a £24 prize draw per each school.

ETHICAL APPROVAL

The protocol for this research study was approved by the University of the West of England Research Ethics Committee in October 2007.

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COMPETING INTERESTS

This work was supported by the Big Lottery Fund and was commissioned as an independent evaluation by the Soil Association. The authors declare that no competing interests exist.

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