

Foreword

The Food for Life Partnership is a third-sector coalition of food and health promotion charities – the Soil Association, the Focus on Food Campaign, the Health Education Trust and Garden Organic. Together we are working with 2,700 schools across England to transform school meals and food culture, supported by a BIG Lottery grant of £16.9 million over five years.

We believe that good food and good food education are the foundation of a healthy future for our children. With healthy food, children get a fair chance to learn and achieve at school and to contribute fully to an adult working life. Good food education, including cooking and growing, gives young people the skills and knowledge they need to take responsibility for their own diet and the health of their future families.

This report highlights the encouraging progress being made with school meals and food education, and underlines the huge potential of the Food for Life Partnership model. But it also sounds a warning about local authority cuts that are undermining the efforts of some of the most progressive councils, contract caterers and schools we work with.

Children and Families Minister Sarah Teather has made a welcome commitment to "ensure school meals continue to be healthy". Now is the time to make good that commitment by maintaining the central government support that is needed to ward off short-term cost cutting, promote the successful 'whole school' approach modelled by the Food for Life Partership and build a secure future for healthy food in schools.

Libby Grundy

Director Food for Life Partnership



Summary

This report outlines how substantial improvements in school food in England over the past five years are beginning to deliver significant benefits to pupils' health and ability to learn.

It sets out why the progress made is good news for the Government as well as for children, but warns that local authority cuts and structural changes are starting seriously to undermine the progress made. Schools still need government money to provide good food – there are currently very few cases where the lunch service is self-financing.

It concludes with a series of policy recommendations to help safeguard the transition to a healthy, financially viable school meal service.

BETTER FOR CHILDREN: SCHOOL FOOD TODAY

Recent research by the School Food Trust showed that school meals in England are now consistently more nutritious than packed lunches, giving the children who eat them a better foundation for good health. A nutritious school lunch also helps to improve children's behaviour, concentration and readiness to learn. Research in Sheffield primary schools in 2009 found that pupils were over three times more likely to concentrate and be alert in the classroom in the afternoon when improvements were made to the school dining room and the nutritional quality of school lunches.

BETTER FOR US ALL: THE WIDER BENEFITS OF GOOD SCHOOL FOOD

New rules for the quality of food served in schools, a fresh approach to food education and a growing emphasis on food purchasing from local producers are showing that the school meals service can bring

benefits for everyone – children, families and communities. The Food for Life Partnership (FFLP) has developed a successful blueprint that promotes better health and success in school and also reduces social inequality, helps the environment and protects local employment.

TURNING BACK THE CLOCK

Mounting financial pressures on local authorities are putting the brakes on the school food revolution:

- ▶ In Nottinghamshire cost-cutting measures threaten to break up the local-authority catering team that has gone further than any other in England in transforming school meals and food culture
- ▶ In the south London borough of Croydon the council has served notice on one of the country's most forward-looking contract caterers for school food, deciding not to re-tender its school meals contract and forcing schools to go it alone
- ▶ In Suffolk the council catering team working with a number of FFLP 'flagship' schools has put its plans on hold for cost reasons. The future is uncertain as the county council considers whether to turn Suffolk County Catering from a not-for-profit service into a separate commercial entity

For FFLP, what matters most is not whether the school meals service is run by local authorities, private caterers or individual schools. Our experience is that there are examples of all three of these models delivering an excellent service. What concerns us is that successful approaches in both the public and private sectors that have developed to suit local needs and circumstances face being dismantled because of the pressure to cut costs.

The prospect of further cuts lurks in the background. The Government has been conducting

Summary

a review of school food policy as part of its comprehensive spending review. A decision must be made on whether to extend the £80-million-a-year School Lunch Grant, a transitional measure to help schools invest in meeting higher nutritional standards and increase the take-up of school meals.

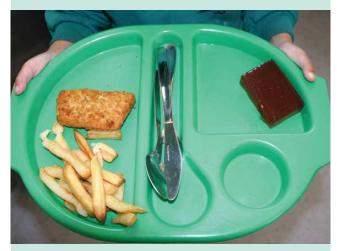
The Government spends more in three days on diabetes, strongly linked with obesity, than it spends on the School Lunch Grant in an entire year. If a healthy school meal service, linked to good food education, can help reduce the incidence of Type 2 diabetes by just 1% then it will more than pay for itself in savings on diabetes costs alone.

Even before any central government cuts many schools find themselves contemplating whether to put up the prices charged to parents to ensure that they can meet nutritional standards and cover the cost of the service. They know that if they increase prices too steeply, however, the take-up of school meals will fall and any kind of service will become increasingly unviable.

We are not facing the return of the Turkey Twizzler just yet – the Government's nutritional standards and the determination of so many schools protect against that. But what we do face is just as bad – an accelerating decline in the number of schools providing any kind of hot meal because the demands of cost and quality are too difficult to reconcile, so the sums simply don't add up.



Both caterers and headteachers have told the FFLP how concerned they are about the cost-cutting climate in which they now have to operate. In a survey of 29 school catering contractors conducted for this report by the FFLP, 69% said they anticipated cuts this academic year in the school meals services to which they contribute. Seventy-seven per cent



Tray 2005



Tray 2010

said removal of the Government's School Lunch Grant would have a severe impact on the quality of the service they provide.

In a letter to the Education Secretary in October 2010, 50 headteachers from FFLP schools have urged the Government to "protect the vital school lunch service from the cuts to local authority budgets". The letter asserts that "the implementation of food and nutritional standards in primary and secondary schools has seen great improvement in the quality of food served in schools, but these improvements are now at risk from the pressures of local authority spending cuts".

POLICY PROPOSALS

With local authority cuts already starting to bite, the FFLP believes that continuing central government support for the school meals service is vital. In a submission to the Department for Education, we have argued that simply discontinuing the School Lunch Grant with no further financial support risks returning the school meal service to a cycle of decline and widespread closures.

Instead we propose a range of measures that the Government could adopt to drive forward the school food revolution and ensure a coherent approach across all government financial incentives for schools:

- ▶ Extend the School Lunch Grant beyond March 2011 or, if the grant must go, replace it with a School Food Premium to incentivise best practice. A carefully targeted premium of the kind described in detail in this report would focus government support by giving headteachers a direct financial incentive to increase meal take-up and improve the economic viability of school catering services.
- ▶ Promote the FFLP's 'whole school' approach, in which the provision of healthier food is

complemented by a more sociable dining environment and opportunities for children to visit farms and grow and cook food at school.

- ▶ Improve Ofsted inspections so that inspectors fully assess the quality of school meals and the effort head teachers make to promote the lunch service. Like any business, the school lunch service needs customers. When the canteen is full, the school lunch service can thrive and will be less dependent on government money. Head teachers can really make a difference here.
- ▶ Use the Pupil Premium to help schools improve poor pupils' access to good food.
- ▶ Use school buildings capital for kitchens, dining areas and good growing space vital facilities if the whole school approach is to gain ground.
- ► Encourage stay-on-site policies and breakfast clubs for pupils with challenging behaviour.
- ▶ Promote School Food Trust guidance for catering specifications, encouraging more local authorities and schools to reduce carbon emissions and support the local economy by using more local and organic food.

Better for children: school food today

Substantial improvements in school food in England over the past five years are beginning to deliver significant benefits

OBESITY AND POOR NUTRITION

The UK has the highest rate of childhood obesity in Europe. A quarter of children are overweight or obese, and research by the Government's Foresight programme suggests that some 40% of Britons will be obese by 2025, if current trends continue.¹

Obesity increases a child's chances of suffering from serious health conditions in the longer term, such as heart disease, Type 2 diabetes and some cancers. It can also have a more immediate effect on children's health and quality of life. Many under-12s already show signs of high blood pressure and cholesterol, diabetes and liver disease.²

Until recently school food was part of the problem – gravely deficient in some of the nutrients essential for healthy growth but high in sugar, salt and saturated fat. Central government made no funding available for school lunches except to cover the approximate cost of free school meals for those entitled to them.

Compulsory competitive tendering by local authorities made matters worse. In the absence of adequate food standards, it created a situation in which school meal providers were under pressure to deliver lowest-cost solutions at the expense of nutrition and quality. Kitchen and dining room infrastructure suffered chronic underinvestment, and in many schools the facilities disappeared altogether.

A CHANGE IN APPROACH

In 2005 Jamie Oliver's television series on school dinners and the School Food Campaign – bringing together 300 organisations – helped galvanise a change in approach that has revolutionised school food provision. Additional government funding gave schools more scope to invest in better-quality

ingredients and improve kitchen facilities, while new mandatory nutritional standards were introduced across England's primary and secondary schools from September 2007 onwards. Junk-food vending machines were banned from school premises, and the new standards prescribed both the types of food that children should be offered in school, and the proportion of nutrients that school meals should supply.

BETTER FOOD FOR BETTER HEALTH

Research by the School Food Trust³ has shown that school meals in England are now consistently more nutritious than packed lunches, giving the children who eat them a better foundation for good health. Providing a healthier alternative to packed lunches is particularly important for children from lower-income families, whose packed lunches were found by the School Food Trust to contain more fat, salt and sugar and less fruit and vegetables than those of children from wealthier backgrounds.

BETTER CONCENTRATION AND THE ABILITY TO LEARN

As well as improving health, a nutritious lunch in school helps to improve children's behaviour and concentration – and ultimately their readiness and ability to learn. Since the transformation in school food began, many teachers have reported that children are more alert following a healthy lunch. This anecdotal feedback is reinforced by research in Sheffield primary schools in 2009, which found that pupils were over three times more likely to concentrate and be alert in the classroom in the afternoon when improvements were made to the school dining room and the nutritional quality of school lunches.⁴

In Greenwich – the London borough where Jamie Oliver's Feed Me Better school food campaign began – test results among 11-year-olds in English and Science have shot up, and absenteeism due to sickness has fallen. Researchers from Oxford University and the University of Essex say the positive effects of the campaign on educational attainment are comparable in magnitude to those seen after the introduction of the literacy hour in the 1990s.⁵

These Sheffield and Greenwich findings add weight to a wealth of evidence linking poor nutrition with behavioural problems, and connecting good nutrition with the ability to learn. For example, the seminal study by Bernard Gesch at HM Young Offenders Institute in Aylesbury in 1996–97 found that the rate of behavioural offences fell by up to 37% among inmates receiving nutritional supplements.⁶ Several studies have shown that hungry children behave worst in school, that fights and absences are reduced when nutritious meals are provided, and that school children given nutritional supplements show less aggression when placed under stress.⁷ (See also graph overleaf.)

INCREASING TAKE-UP

Improving school lunches will not ultimately deliver better health if fewer children eat the healthier meals on offer. But the new healthier menus are starting to win over parents and pupils alike. Last year 320,980 more pupils ate school lunch than the year before, an increase of almost 2%.8 (See also graph overleaf.)

ADDING VALUE THROUGH THE FOOD FOR LIFE PARTNERSHIP MODEL

The Food for Life Partnership (FFLP), which currently works with 2,700 English schools, has taken the

school food revolution a step further. Its key added ingredient is a multi-faceted approach to food education. The children in FFLP schools not only eat good food, but they also learn where it comes from, how it is produced, and how to grow and cook it themselves. Healthier menus are complemented by cooking lessons, on-site fruit and vegetable growing and visits to local farms.

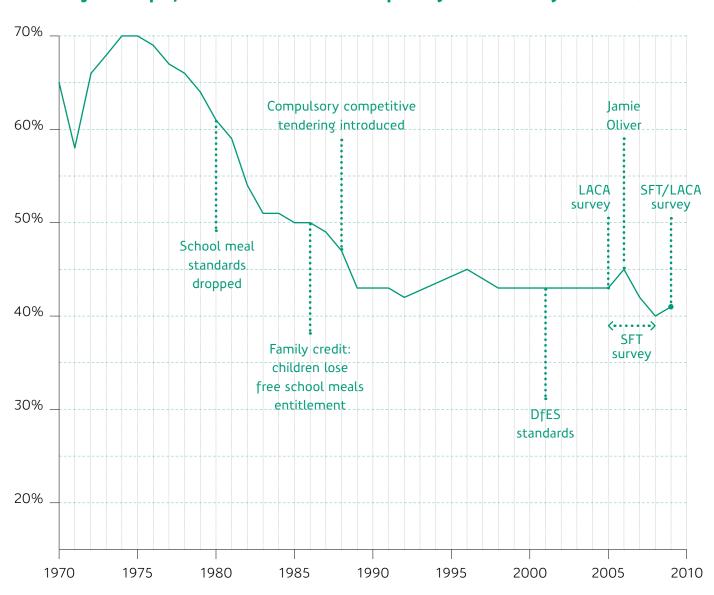
This comprehensive approach to food education gives children the skills and knowledge they need to take responsibility for their own diet and the health of their future families. It also helps generate extra enthusiasm for the healthy lunches on offer at school – it "gives the children a reason to eat the food", in the words of one catering manager. Since 2007 take-up of school lunches in primary schools has increased at almost three times the national average in the first 64 schools to report take-up figures on progressing from enrolment in the FFLP to bronze, silver or gold certification.⁹ This rate of growth is more than seven times the national average. Such a rapid increase in take-up shows that the FFLP approach has the potential to 'fast track' schools to a position where their meals services are independently financially viable, without the support of central or local government subsidy.

The FFLP takes a 'whole school' approach to decision making, involving catering staff, teachers, families and pupils. It aims to promote personal responsibility and ownership at every stage.

Schools report that enrolling in FFLP helps them to improve the curriculum: the kitchen and garden make excellent learning environments for literacy and numeracy, as well as history, geography and science. Headteachers report improvements in attendance, behaviour, attentiveness in class and attainment. The programme also provides valuable life skills that can help close the attainment and opportunity gap which currently exists between rich and poor people.

Better for children: school food today

Percentage take up of school meals 1970-2009 (primary and secondary combined)¹⁰



INDEPENDENT ENDORSEMENT

The Food for Life Partnership model is winning plaudits in Ofsted inspection reports and in the early findings of those evaluating the work of the FFLP – the New Economics Foundation, the University of the West of England (UWE), the National Foundation for Educational Research and the BIG Lottery's Health and Wellbeing arm.

The FFLP is being assessed for its ability to increase meal take-up; its effects on pupil health and learning opportunities; and its wider social, economic and environmental benefits. Full reports are due in 2011.

"The evidence so far shows that the Food for Life Partnership is achieving a much higher rate of increase in the take-up of school meals than is occurring nationally," says Mat Jones, senior lecturer in health and social policy at UWE's Institute for Sustainability, Health and Environment. "What the FFLP is doing for schools also goes beyond a simple health intervention, with improvements in children's behaviour and their general attitude to learning."

Extracts from recent Ofsted reports include:

Twerton Infant School, Bath (June 2009)

"Lessons are planned so that the learning makes links to pupils' everyday life, and this captivates their interest. For example, pupils plant their own vegetables, look after them and watch how they grow. They then pick them when ready and use them to provide a delicious meal to enjoy, thus promoting lifelong learning. The school is justifiably very proud of its silver award for FFLP scheme. Pupils have an exceptional understanding of how to keep healthy and know that breakfast is the most important meal of the day."

King's Meadow Primary, Berkshire (May 2009)

"The teaching of these subjects is made more meaningful to pupils through an excellent range of topics and themes, which are enriched extremely well by an impressive array of extra-curricular activities such as gardening and cookery."

Cowes Primary School, Isle of Wight (March 2009)

"[The pupils] have a very good understanding of how to stay healthy. One of the main reasons for this is because they eat in the school restaurant 'La Cocina', which provides freshly cooked food, locally sourced, including produce from the school allotment in the summer. This means that a much larger proportion of pupils now eat a hot meal at lunchtime."

St Peter's High School, Essex (November 2009)

"The school plays a leading role in promoting healthy lifestyles through the Food for Life programme and a good food technology curriculum. Improvements in the quality of food on offer in the school canteen have been met with much enthusiasm, as shown by an increase in the take-up of school meals."

Lydgate Infant School, Sheffield (July 2009)

"Through the Food For Life initiative pupils are taught about food sources, food production, food preparation and cooking skills... Pupils have an excellent understanding of how to live healthily and show an excellent understanding of how the way they live can affect the world they inhabit."

The kind of improvements in Food for Life Partnership schools exemplified by these Ofsted report extracts are further illustrated by three school case studies overleaf

Better for children: school food today

CASE STUDY 1

A WHOLE SCHOOL APPROACH

At Crondall Primary School in Hampshire food has become as important a part of the school day as science or reading, and it shows. Their school meal take-up has increased from 52.6% in 2008 (when the school enrolled with the FFLP) to 72.8% in 2010 - an increase of 20.2%. Headteacher Megan Robinson feels that this is because the school values food so highly - using it as an integral part of the teaching curriculum – that the children want to eat the school lunch.

The children are involved in making decisions about what is served at lunch and grown in the school garden through the School Nutrition Action Group, which also has representatives from the local village and the children's parents.

At lunchtime every pupil has a role to play. The oldest pupils help serve, and year five are charged with helping reception to choose food and finish their plate. The school has raised funds to invest in a permanent cookery room that can also be rented to the local community for food education classes. Children grow some produce for the lunch menu on the school allotment, making food a central part of the school day and reaping benefits in increased take-up.

CASE STUDY 2

BETTER BEHAVIOUR AND ATTENDANCE

Louise Rosen was headteacher at St John the Baptist School in Hackney, East London, where attendance is hitting the highest levels on record. The average is 96%, with many classes reaching 100%.

The school is the first in London to achieve the FFLP gold standard, based on 15 indicators of food quality, education, food culture and community engagement. Fresh produce represents more than three-quarters of the food served, with half of it locally sourced and 30% from a certified organic or Marine Stewardship Council source.

"The change in the children's behaviour when we changed the food from processed to freshly prepared and organic was incredible," she says. "They're much happier and more attentive in class now. Over 72% of the children now have school meals. Even those who previously refused to eat vegetables are trying and enjoying them for the very first time."

CASE STUDY 3

CONNECTING WITH LOCAL FARMERS

St Wilfrid's Secondary School in Wakefield decided to bring catering provision in house and enrol in the FFLP programme when its contract with Bradford Catering Services ended in 2007. The school now produces its own lunches for half its 1,800 pupils and 190 staff. Meal up-take has increased, and feedback from the children has been positive.

A suppliers' day was organised to discuss the school's needs with existing and potential suppliers. Priority was given to suppliers who could best provide quality of service and local produce including free-range poultry and pork. A 'rumbler' (vegetable peeling machine) was purchased for the school kitchen, making it possible to wash and peel vegetables from a local organic grower.

The school has a cooking club, and pupils cook with and eat the produce grown in the school growing area. Parents and the wider community get involved in food education via food-themed events.

"Food for Life has raised the profile of food in the school, and there has been overall improvement in food quality," says Helene Askham, catering manager.

Better for us all: the wider benefits of good school food

High mandatory nutrition standards, a fresh approach to food education and a growing emphasis on purchasing from local producers are showing that the school meals service can contribute positively to all our lives

The Food for Life Partnership (FFLP) has developed a blueprint that not only promotes better health and educational achievement but also reduces social inequality, helps the environment and protect local employment.

In our recent submission to the Government's review of school food policy we argued that good school food and food education can contribute positively towards the goals of a number of government departments - and bring a wide range of benefits for the whole of society.

IMPROVED HEALTH AND WELL-BEING

While many children are consuming too much energy and becoming overweight, many are also malnourished because they are not meeting daily vitamin and mineral requirements. Poor health disproportionately affects disadvantaged children.¹¹ Better access to good food at school means better health and improved life chances.

Healthy food at school is an early intervention that not only equips children to be healthier in adult life but also has the potential to help save millions in future healthcare costs. The annual direct cost of diet-related disease to the NHS alone is estimated to be at least £1 billion and rising, while the wider costs to society and business are estimated to reach £49.9 billion per year (at today's prices) by 2050.12 (See also the example of diabetes costs on page 21).

A more nutritious diet is not the only health benefit associated with good school food and complementary food education. The FFLP's emphasis on growing fruit and vegetables in school gardens and encouraging the children to eat them can help young people's mental well-being and their behaviour, in and out of class.

Evidence linking horticulture with improved wellbeing has found a diverse range of benefits that are

likely to influence pupils' time at school, including lower rates of crime, lower incidence of aggression, greater ability to cope with poverty, better life functioning, greater life satisfaction, and reduced attention deficit symptoms.¹³ Growing food can encourage increased consumption of fresh fruit and vegetables, potentially improving both physical health and pupils' ability and inclination to learn.14

SUCCESS IN SCHOOL

We have already seen in the previous section of this report how research in Sheffield and Greenwich has highlighted links between healthy eating and pupils' concentration and learning at school. We have also seen how better school food and food education amplify children's interest in healthy eating and learning. These benefits are good news not only for the children but also for the whole of society, because of what better educated children can contribute as adults to our communities and our prosperity.

The Oxford-Durham trial linking nutrition and attainment (involving 117 under-achieving children from mainstream schools aged 5-12) demonstrated significant improvements for those taking a nutritional supplement in terms of learning, behaviour and working memory. Their reading improved at three times the normal rate and their spelling improved at twice the normal rate.15 An increasing body of research links better food - including a healthy breakfast - with better performance and behaviour among school children.16

TACKLING AN UNFAIR SOCIETY

Poor children tend to have the most limited access to healthy food, and benefit the most from school food interventions. Without good school food,

Better for us all: the wider benefits of good school food

inadequate nutrition may inhibit school performance and contribute to a life of under-achievement for these children.¹⁷

The Under-Secretary of State for Children and Families, Tim Loughton, has acknowledged in the House of Commons that school meals "often represent the only nutritious meal in some children's day." Unfortunately schools are not obliged by law to provide anything more than free school meals, and a sandwich can pass for a meal. After decades of decline in the school meal service, children eligible for free school meals may miss out on a freshly cooked hot lunch and all the nutritional benefits that entails. Without adequate take-up from across the school, a hot school meal service quickly becomes unviable.

The FFLP's whole school approach, integrating food into all aspects of school life, is proving to be a highly effective way to increase take-up of school meals and make school meal services viable again - to the benefit of disadvantaged children. FFLP schools in disadvantaged areas report an increase in attendance, as well as improved behaviour.

A SENSE OF RESPONSIBILITY

The Government wants to see a shift in power from central government to civil society, with more of a sense of community responsibility and more community organisations involved in running public services. The Food for Life Partnership model can help a wide range of players work together - schools and local authorities, pupils and families, school teachers, catering staff and farmers - for everyone's benefit.

A hands-on approach to food education also encourages young people to take responsibility for their own diet, health and life prospects. Better food and good food education help children to understand where their food comes from and how it affects the environment, human health and the welfare of animals. Ofsted reports from FFLP schools routinely indicate 'outstanding' achievement in areas where the programme has been implemented, particularly in areas of personal responsibility.

BETTER FOR THE ECONOMY

The Government's immediate priority is to reduce the UK's budget deficit while keeping as many people in employment as possible. Keeping money circulating in the local economy may help to avoid a return to recession.

The school catering industry is worth £1.2 billion per year. The Food for Life Partnership - with its goal that at least 50% of school-meal ingredients should be locally sourced – is helping to channel more of this money into the local economy and to local food producers. Over 200,000 meals are now served daily to Food for Life Catering Mark standards. One Social Return on Investment study¹⁸ showed that every pound spent on serving Food for Life standard school meals created £6 worth of local economic, social and environmental benefits.

By buying directly from local suppliers and planning menus well, schools can often save money on ingredients and still invest more in the local economy. One hospital (which is also working to Food for Life Catering Mark standards) recently claimed to have saved £6 million a year by buying directly from local suppliers.¹⁹

BETTER FOR THE ENVIRONMENT

The FFLP advocates using more of the school food bill to support British farmers and organic farming. This fits with the Government's aim of supporting



green growth and creating green jobs.

Buying locally enables schools to cut the carbon emissions associated with transporting food over long distances. Buying organic delivers a wide range of environmental benefits acknowledged in Defra's organic action plan for England,²⁰ which asserts that organic farming results in higher levels of biodiversity, lower pollution from pesticides, less waste and a reduction in carbon dioxide emissions through lower energy use.

In 2005 the Government's independent watchdog on sustainable development pointed out that environmentally friendly food procurement is also good for people's health. "The evidence is clear that sustainable consumption and better nutrition can and should go hand in hand," it said. "Seasonal produce, better quality meat in lower quantities, and a shift from white to oily fish are all changes that are desirable from a nutritional and a sustainability perspective."²¹

BETTER FOR BUDGETS

The FFLP is a cost-effective programme. Its budget of £3.4 million per year, to work with at least 3,600 schools in England, can legitimately be set against the direct annual cost to the NHS of £1 billion to treat obesity and related problems, and the further impact of obesity on employment estimated at as much as £10 billion.²² Recent research²³ suggests that healthier school food has a positive impact on pupils' academic achievement and therefore on their lifetime earnings, returning the Government's investment tenfold.

Another important aspect of the FFLP's cost-effectiveness is the positive impact it is having on the take-up of school lunches. When take-up increases, schools become less dependent on government money to provide school meals.

Turning back the clock

Local authority cuts are starting seriously to undermine the progress made in improving school meals

Mounting financial pressures on local authorities are putting the brakes on the school food revolution, as case studies 4–6 later in this section illustrate:

- ▶ In Nottinghamshire cost cutting measures threaten to break up the local-authority catering team that has gone further than any other in England in transforming school meals and food culture
- ▶ In Croydon the borough council has served notice on one of the country's most forward-looking contract caterers for school food, deciding not to re-tender its school meals contract and forcing schools to go it alone
- ▶ In Suffolk the council catering team working with a number of Food for Life Partnership (FFLP) flagship schools has put its involvement in the FFLP on hold for cost reasons. The future is uncertain as the county council considers whether to turn Suffolk County Catering from a not-for-profit service into a separate commercial entity.

For the FFLP, what matters most is not whether the school meals service is run by local authorities, private caterers or individual schools. Our experience is that there are examples of all three of these models delivering an excellent service. What concerns us is that successful approaches in both the public and private sectors that have developed to suit local needs and circumstances face being dismantled because of the pressure to cut costs.

The prospect of further cuts lurks in the background. The Government has been conducting Ja review of school food policy as part of its comprehensive spending review. A decision must be made on whether to extend the £80-million-a-year School Lunch Grant, a transitional measure to help schools invest in meeting higher nutritional standards and increase the take-up of school meals.

We believe that simply discontinuing the grant with no further financial support risks exacerbating

the effects of local authority cuts and returning the school meal service to a cycle of decline and widespread closures. Most local authorities and schools with a quality meal service have been using the grant to subsidise their food spend (average meal production cost exceeds charge-out cost by 42 pence in primary schools²⁴) and these subsidies are now a potential target for cuts. Many schools still need this government money to provide good food – there are currently very few cases where the lunch service is self-financing.

There is no obligation on local authorities to provide anything beyond free school meals, making closure of the school meal service an attractive option to some. Widespread closures and a return to the 'bad old days' would lose the Government a vital and effective early intervention tool for tackling the obesity epidemic and improving behaviour and educational attainment in schools.

Even before any central government cuts many schools find themselves contemplating whether to put up the prices charged to parents to ensure that they can meet nutritional standards and cover the cost of the service. They know that if they increase prices too steeply, however, the take-up of school meals will fall and any kind of service will become increasingly unviable.

We are not facing the return of the Turkey Twizzler just yet – the Government's nutritional standards and the determination of so many schools protect against that. But what we do face is just as bad – an accelerating decline in the number of schools providing any kind of hot meal because the demands of cost and quality are too difficult to reconcile, so the sums simply don't add up.

CONCERNED CATERERS AND HEADS

Both caterers and headteachers have told the FFLP how concerned they are about the cost-cutting



climate in which they now have to operate. In a survey of 29 school catering contractors conducted for this report by the FFLP, 70% said they anticipated cuts this academic year in the school meals services to which they contribute. Seventy-nine per cent said removal of the Government's School Lunch Grant would have a severe impact on the quality of the service they provide.²⁵

In a letter to the Education Secretary in October 2010, 50 head teachers of FFLP schools have urged the Government to "protect the vital school lunch service from the cuts to local authority budgets". The letter asserts: "The implementation of food and nutritional standards in primary and secondary schools has seen great improvement in the quality of food served in schools, but these improvements are now at risk from the pressures of local authority spending cuts."

The following three case studies illustrate the impact that cuts are already having on school meals services

Turning back the clock

CASE STUDY 4

DISMANTLING A WINNING TEAM

Nottinghamshire is where England's school food revolution began. In 2000 St Peter's Church of England Primary School in East Bridgford, Nottingham, decided to opt out of local authority catering arrangements and take control of its own school meal budget. Its catering manager, Jeanette Orrey, began sourcing directly from local farmers to improve the quality of ingredients while keeping costs down.

Jeanette's award-winning efforts inspired both the Soil Association's Food for Life campaign and Jamie Oliver's school dinners series on Channel 4, catapulting school food into the national media spotlight and pushing it up the political agenda. Other Nottinghamshire schools began to join St Peter's in embracing the Food for Life model.

Nottinghamshire County Council enrolled in the FFLP and became the first local-authority caterer to provide all its schools - primary and secondary with food that meets Food for Life's silver standard. This means that every day 30,000 children in 368 Nottinghamshire schools eat meals that contain at least 75% fresh food, with a range of local and organic ingredients. All chicken, eggs and pork are Freedom Food-certified or free range, and no fish from unsustainable sources is served.

Coppice Farm Primary is one of the many Nottinghamshire schools to reap the benefits. The take-up of its school meals increased from 34% to 51% in just two years between 2007 and 2009, and last year's Ofsted report was complimentary. "Staff have planned a curriculum which meets pupils' needs well because they find it engaging, relevant and fun," it said. "A good example of this is the innovative work on the FFLP project, which has been extended to involve parents in providing

healthy meals at home."

Jo Sharpe, headteacher at Coppice Farm, credits the FFLP with contributing to the school's academic achievements. "We feel that without Food for Life we would not have achieved those top grades just yet," she says.

Despite such successes, Nottinghamshire County Council is preparing to close down its in-house catering team and contract out its school meals service as part of a series of cost-cutting measures. A trading service review conducted by Tribal Consulting²⁶ has proposed outsourcing as the only way forward, declaring alternative delivery models or 'internal improvement' unviable.

The service's budget of £15.7 million is partly dependent on £1 million in School Lunch Grant from the Government. It also includes a council subsidy to help cover a 20% increase in costs stemming from backdated salary increases based on a National Job Evaluation (NJE) review last year. The council has signalled that it cannot afford to go on paying the NJE subsidy, and the Government's review of school meal policy has called the future of the School Lunch Grant into question. The council has issued '188 notices', signalling possible redundancy, to 400 of its senior managers - including the team in charge of the school meals service.

"It's been quite a battle just to educate children to recognise healthier foods that are sometimes new to them and eat them regularly," says Donna Baines, the county's Food Development Manager. "The council could live to rue the day our service is outsourced to the private sector because we've got the children eating healthy food and enjoying it."

Another senior manager also fears for the future quality of school meals in Nottinghamshire. "They've told us our costs are high but that's partly because we invest in quality and spend 65 pence per meal on the food," she says. "If we lose the School Food Grant next year, then whoever is doing the catering

could be looking at 62 pence or 61 pence for ingredients, and that makes a difference to the quality of what's on the plate.

"Our performance has been questioned because the take-up of school meals is below the national average. But we started from a low base and we have increased take-up to 39.8% from 34% two years ago. We can make a business case, based on increasing take-up, that suggests we will break even, without any subsidies, within two years."

CASE STUDY 5

SCHOOLS FORCED TO GO IT ALONE

Caterer Eden Foodservice employed a new member of staff to help its cooks attain Food for Life quality standards, and to promote the FFLP model to schools throughout the London borough of Croydon. It did so because it saw the potential of the FFLP programme to help improve food quality and deliver a good financial return through increased take-up.

The company's initial confidence was proved justified. Eden has experienced significant growth in take-up of school meals since enrolment in the FFLP, including a 9% increase between 2008-09 and 2009-10. The extra business justified the expense of promoting one of the company's school cooks, Suzanne Martin from Atwood Primary, to work in support of other schools enrolling in the FFLP.

Operations manager Michael Calder says that the FFLP "gives the children a purpose to have a school meal": it's the whole school approach to health promotion and food education that persuades pupils to choose a healthy school lunch over packed lunches.

Eden's work on the school meals contract is warmly endorsed on the company's website by Allyson Lloyd, Croydon Council's corporate catering manager: "Over the past eight years Croydon Council and Eden Foodservice have developed an open

and transparent partnership which has helped to transform school meals to schools within the central contract."

In 2012, however, this positive partnership will come to an end. The council has decided not to re-tender its 11,500-meal-a-day school meals contract beyond Easter 2011, citing its support for new government policies allowing schools greater autonomy. All the 95 schools currently served by Eden Foodservice via a central contract have been allowed a transitional year in which Eden will continue to provide their meals on a centrally negotiated one-to-one contract basis, but after that they will have to make their own arrangements.

Beverley Baker, then chair of the Local Authority Catering Association, expressed concern at the decision not to re-tender for a central contract August. "While larger schools with higher roll numbers and a well-established healthy eating policy might be more equipped to sustain a school meals service, smaller schools may well struggle," she told Cost Sector Catering magazine.27 "Without the opportunity of sharing costs and arrangements such as procurement of ingredients, running an effective and affordable school meals service for parents may not be, for some, a viable operation."

Allyson Lloyd is now working with the borough's schools to help them manage the transition. "The caterers were doing a fantastic job so this is a huge blow from that point of view," she says. "On the plus side we will end up with a service that is very specific to an individual school or the schools in a particular area. But the thing that bothers me most is making sure that our smaller schools are still able to deliver a service. There are a few that won't be viable unless we can put them into clusters."

For Alex Clark, headteacher at 500-pupil Atwood Primary, the end of the central contract and doubts over the School Lunch Grant both pose challenges. "I'm a headteacher, not a procurement manager,

Turning back the clock

so it is a relief to have a year's grace to think about how we'll do things in the future," he says. "But the end of the central contract means that from next Easter some smaller schools will have topay Eden a large management fee and all schools will be landed with responsibity for maintaining the equipment in their kitchens. In our case that could result in our using money that should really be earmarked for children's education. We currently charge £2.10 for a school meal and that is partly subsidised by the School Lunch Grant, yet we are struggling to increase our take-up at that price. Losing the grant might mean having to drop our standards of food quality, which would prevent us progressing to the Food for Life gold standard, or putting up our meal price to about £2.50 - which would hit take-up."

CASE STUDY 6

COUNTING DOWN TO PRIVATISATION

The FFLP has designated 180 schools across England as flagship schools, earmarked to be fast-tracked to gold-standard accreditation and to serve as exemplars for others on the road to transforming food culture. One such school is the 94-pupil All Saints CEVCP Primary in Lawshall, Suffolk, which has been working towards a menu where farm-assured meat, fresh milk and eggs and organic vegetables are regular features.

"We're a school with a conscience, and we wanted to do something about the food our children were eating," says headteacher Clare Kitto. "The Food for Life Partnership gave me the confidence to look at the quality of our meals and do something about it. It's transformed the way the children view food and transformed the experience of staff as we have learned to pass on skills to children to grow and cook their own food. The numbers eating school meals

have increased because the children are involved in growing the food that is served in the kitchen."

All Saints has achieved its bronze-standard Food for Life Partnership Mark, but further progress has been placed in some doubt. First the school's catering partner, Suffolk County Catering, expressed concern about the costs involved in implementing Food for Life standards. Then Suffolk County Council voted in September to outsource a range of services, including school catering. Suffolk County Catering may now be sold off. Jeremy Pembroke, the council leader, said the decision to outsource services was made "with consideration to the financial deficit in the public sector and the Government's priority to reduce the deficit and the size of the state".²⁸

It is an uncertain time both for Suffolk County Catering and for flagship schools such as All Saints. "We've worked very closely with Suffolk County Catering and with our school cook to achieve bronze," says Clare Kitto. "Now we could end up working with different people, and it might all be about costs and not about quality.

"We feel like we have been cut adrift. It's as if the scaffolding's being removed without checking whether the structure underneath is strong enough."

Protecting progress

The Food for Life Partnership believes that it is vital for central government to continue to provide transitional support funding for the school meals service

School food has come a long way, but we're not there yet. With local authority cuts starting to bite, the Food for Life Partnership (FFLP) believes that continuing central government support for the school meals service is vital. In a submission to the Department for Education, we have argued that simply discontinuing the School Lunch Grant with no further financial support risks returning the school meal service to a cycle of decline and widespread closures.

A route out of grant dependency for school meals is desirable and is certainly possible – if take-up of school meals can be substantially increased. As one business manager for a council in south-west England puts it, "the key to a low cost in providing a school meals service is not to reduce the food cost but to increase sales and thus spread staff and other overheads further".

The FFLP's Caterers' Circle (an advisory group of school caterers from across England) estimates that average take-up levels of 55-60% are needed before school meal services can break even and become self-financing. Take-up above this level will achieve a virtuous circle of increasing quality and steady or reducing meal prices for parents. The current average take-up is 41.4% in primary schools and 35.8% in secondary schools. This means we are heading in the right direction but there is still some way to go. Transitional funding from central government is still needed to help incentivise further improvements in take-up. Cutting the School Lunch Grant at this time, particularly with the financial pressures local authorities already face, risks bringing progress to a grinding halt.

The Food for Life Partnership proposes a range of measures that the Government could adopt to drive forward the school food revolution and ensure a coherent approach across all government financial incentives for schools:

A NEW SCHOOL FOOD PREMIUM?

The FFLP supports a continuation of the School Lunch Grant above all. We believe the current model has many benefits and is favoured by caterers, local authorities and schools.

We recognise, however, that the Government is cutting spending on public sector services and that schools themselves need to take more responsibility for improving the facilities that benefit their pupils the most, like the lunch service.

A carefully targeted School Food Premium in place of the School Lunch Grant could focus government support on giving headteachers a direct financial incentive to increase meal take-up and improve the economic viability of school catering services. Such a measure could also reconcile the competing concerns voiced during the DCSF school funding consultation earlier this year, both encouraging creativity and innovation in the school's promotion of their lunch service and clearly prioritising the need to allocate adequate funding to school food even in the context of reduced public spending and tighter education budgets.²⁹

Under the current system, £80 million has been allocated in each of the years from 2008 to 2010 as a ring-fenced grant to local authorities via the Standards Fund, in proportion to their pupil numbers (70%) and free school meal numbers (30%). Local school forums have then had the responsibility for allocating the grant on a 'fair and equitable basis' to those that provide school lunches, whether it is the local authority (through its own service or a central contract), or a school that is providing its own lunches or using a contracted provider.

Under a new payment-by-results model, the School Food Premium could be targeted at schools rather than school meal providers. The rationale for this is that the priority actions for increasing meal

Protecting progress

take-up (for instance stay-on-site policies, dining room improvement, and a 'whole school' approach to food education) are the responsibility of the school. Currently the school has little incentive to innovate in this area. The experience of the FFLP is that interventions by the school to improve take-up encourage partnership working because they directly benefit the caterer, who enjoys the revenue from increased meal sales. Indeed, schools should be encouraged to plan for an increase in take-up in conjunction with their caterers, who are likely to know the most effective improvements that can be made to the service.

The majority of schools could be encouraged to take small steps to increase take-up by linking a relatively small 'entry-level' premium payment to a moderate increase in meal take-up (for instance, an additional 5% of the school population per annum).30 A higher-tier premium could be linked to more significant increases in take-up within a three-year period (an additional 20% or more of the school population, for example) or to achievement of take-up levels at or over 70%. This would act as an incentive for schools to innovate and invest.

Schools could receive a small amount of investment up front. After one year (at the end of March 2012) schools would demonstrate progress towards the three-year target (20%) or achievement of the one-year target (5%) before receiving the premium.

Headteachers do have the money to invest immediately in their dining facilities or food education if they decide this is a priority for the school: the Dedicated School Grant. With a new premium, the significant financial return for achieving the specified school meal take-up increases would give headteachers a strong incentive to allocate some of their core budget (and effort) to this area. When they succeed in raising take-up figures, they will see an immediate return on their investment (the premium)

and the school meal service will have progressed towards independent financial viability.

Assuming funding of £240 million for the premium over three years (sustaining the level of investment represented by the School Lunch Grant), this could break down into £120 million for the entry-level premium (£40 million per annum) and £120 million for the higher level.

The Department for Education could choose to target the higher-level premium exclusively at secondary schools. Secondary schools face particular challenges in increasing take-up of healthy school meals, not least among which is the temptation of junk food outlets in the 'school fringe'. Many parents support their children's right to go off site to buy food at lunchtime, partly because the queuing times for a school meal can be long.

Headteachers have the option of introducing stay-on-site policies, which would remove this competition and would also have many perceived benefits for local communities from reduced littering and behaviour problems around schools. The two main disincentives for headteachers enacting stay-on-site policies are the problem of behaviour management in the lunch hour (staggered lunchtimes, or employing prefect supervision, could work here) and inadequate dining facilities. A substantial higher-level premium targeting secondary schools could act as the incentive needed to innovate and overcome these challenges.

For schools with take-up already over 70% we propose that they receive their premium (possibly at a lower level) if they maintain this take-up over the three-year period. In this way they will not be punished for being early movers. At take-up levels this high, schools with in-house catering should not be dependent on the lunch grant anyway.

Continued overleaf

OBESITY AND TYPE 2 DIABETES

The cost of putting healthier school meals on a firm financial footing pales into insignificance alongside the human and economic costs of failing to educate children about healthy eating and give them a healthy start in life. The sharp rise in Type 2 diabetes in the UK offers a powerful illustration of what is at stake - and shows why not maintaining support for good food in schools and good food education could turn out to be a false economy.

The human cost³¹

Of all serious diseases, Type 2 diabetes has the strongest association with obesity. It develops when the body still makes some insulin, but not enough, or when the insulin that is produced does not work properly (known as insulin resistance). In most cases this is linked with being overweight.

According to Diabetes UK the number of people diagnosed with diabetes in the UK has nearly doubled since 1996, from 1.4 million to 2.6 million. Around 400 people are diagnosed every day, and about 90% of these new cases are Type 2. They face a reduction in life expectancy of up to ten years.

Diabetes and its complications are linked with 11.6% of deaths among people aged 20-79 in England. It causes a hundred amputations a week and diabetic retinopathy is the leading cause of blindness in the UK's working-age population. The first cases of childhood Type 2 diabetes in the UK were only diagnosed ten years ago, 32 and now an estimated 1,400 children have the condition.33

The importance of school meals and food education

In 2006 almost one in four children in England measured in reception year were overweight or obese. In Year 6 the rate was nearly one in three. This shows that patterns of unhealthy eating and lack of exercise set in at a very young age - and that effective interventions at school that promote healthy living have huge potential to reduce some of the most harmful and costly health problems.

Diabetes UK describes awareness and prevention as "crucial" if the incidence of Type 2 diabetes is to be reduced. The key to prevention, it says, is that people should be physically active and eat a healthy, balanced diet that is low in salt, sugar and fat with lots of fresh fruit and vegetables - precisely the diet that school lunches now provide.

"It is important that children are aware of what constitutes a healthy, balanced diet and have access to that," says Libby Dowling, a clinical adviser at Diabetes UK. "If we are in a position to give children a healthy, balanced diet in school then good habits can become engrained so that children take them into their adult lives."

The economic picture

It is estimated that 10% of the NHS budget is spent on diabetes and its complications. That puts total NHS costs associated with the condition at £10 billion a year,³⁴ or £192 million a week. The average NHS diabetes-related spend for the 2.6 million people with diabetes is thus £3,846 per year.

The annual cost of the School Lunch Grant is £80 million, which is the equivalent of £9.88 for each of the 8.1 million children in our schools.

This means that the Government spends more on diabetes in three days than it spends on the School Lunch Grant in an entire year. And the average annual cost to the NHS for a single diabetes patient would cover the cost of the School Lunch grant for 389 children. If a healthy school meal service, linked to good food education, can help reduce the incidence of Type 2 diabetes by just 1% then it will more than pay for itself in savings on diabetes costs alone.

Protecting progress

PROMOTE THE FOOD FOR LIFE PARTNERSHIP'S 'WHOLE SCHOOL' **APPROACH**

The FFLP model is a demonstrably successful method of raising school meal take-up, improving pupil health and behaviour and fostering a school environment that promotes responsibility, fairness and high levels of attainment. The FFLP's whole school approach complements the provision of healthier food with a more sociable dining environment and opportunities for children to visit farms and grow and cook food at school.

As we have seen in this report, there are good examples of local authorities, private-sector caterers and individual schools providing an excellent meal service. There is no one-size-fits-all structural approach that necessarily works in all local circumstances. What the most successful school meals services have in common, however, is a whole school approach of the kind modelled by the Food for Life Partnership. High nutritional standards alone are not enough if there is not also serious investment in hands-on food education in the classroom, the kitchen and the school garden – and the kind of concrete targets for schools to aim for that Food for Life's bronze, silver and gold standards provide.

IMPROVE OFSTED INSPECTIONS TO ASSESS FOOD QUALITY AND **FOOD EDUCATION**

Ofsted inspection criteria are currently inadequate to inspect the quality of food on offer in schools, assess whether or not meals meet the nutritional standards and register the extent to which schools promote their lunch service. The criteria should be extended to cover all the potential benefits good

food can bring. The inspection of school food should remain within the responsibility of a main schools inspectorate, as the influence of good food and food culture extends to every realm of school life. This should include the teaching of all aspects food education.

USE THE PUPIL PREMIUM TO HELP SCHOOLS IMPROVE POOR PUPILS' **ACCESS TO GOOD FOOD**

Although schools will retain responsibility for spending the premium on what they know their pupils' needs to be, government guidance should promote healthy food as one effective way to improve attendance, behaviour and concentration, especially for disadvantaged pupils. It should also address the stigmatisation that prohibits pupils eligible for free school meals from taking up their healthy lunch.

USE SCHOOL BUILDINGS CAPITAL FOR KITCHENS, DINING AREAS AND **GOOD GROWING SPACES**

School kitchens, attractive dining areas and school gardens are vital facilities if the whole school approach is to gain ground. No new schools including new academies – should be built without the facilities to prepare a hot meal on site and seat the school's population in convivial surroundings at lunchtime. Facilities should preferably include the space for children to cook and grow some food themselves.



ENCOURAGE STAY-ON-SITE POLICIES AND BREAKFAST CLUBS FOR PUPILS WITH CHALLENGING BEHAVIOUR

All children entitled to free school lunches should be entitled also to a free school breakfast, whose content should, like school lunches, be subject to the nutritional standards.

PROMOTE SCHOOL FOOD TRUST GUIDANCE FOR CATERING SPECIFICATIONS

The School Food Trust has produced A Fresh Look at School Food Procurement: efficiency and sustainability, encouraging local authorities and schools to reduce carbon emissions and support the local economy by favouring local and organic food. But few schools or authorities use it. When negotiating catering contracts it can help every authority or school get value for money while using more of the £1.2 billion school lunch bill to support the British economy and pursue government objectives for carbon reduction.

References

- 1 www.foresight.gov.uk/ourwork/activeprojects/obesity/ obesity.asp
- 2 Alleyne, R, 'Obese children eating themselves to an early grave'. Daily Telegraph, 9 May 2009
- **3** www.schoolfoodtrust.org.uk/school-cooks-caterers/reports/ school-lunch-versus-packed-lunch-evidence-of-compliance -with-school-food-standards
- 4 School Food Trust (2009), 'School Lunch and Learning Behaviour in Primary Schools - An Intervention Study'
- 5 Hunt, L, 'Serve me some humble pie, Jamie', Daily Telegraph, 31 March 2010
- **6** Gesch B et al (2002), 'Influence of supplementary vitamins, minerals and essential fatty acids on the anti-social behaviour of young prisoners', British Journal of Psychiatry, 181: 22-28 (see also the Natural Justice website: www.naturaljustice.org.uk
- 7 Van der Weyer, C, Changing Diets, Changing Minds: How food affects mental well being and behaviour, Sustain (2005)
- 8 School Food Trust (2010), 'Fifth Annual Survey of School Meal Take-up in England, July 2010' (www.schoolfoodtrust. org.uk/school-cooks-caterers/reports/fifth-annual-surveyof-take-up-of-school-meals-in-england)
- **9** This is an average increase of 5.3% if we calculate the average additional percentage of the total school roll eating school meals in these 64 schools since enrolment in the FFLP. This is an increase of 14.8% if the average percentage improvement on the numbers of children already eating school lunches in these 64 schools is calculated.
- 10 Courtesy of the School Food Trust
- **11** www.food.gov.uk/science/dietarysurveys/ndnsdocuments
- 12 www.foresight.gov.uk/ourwork/activeprojects/obesity/ obesity.asp
- **13** Kuo FE (2006), 'Horticulture, well-being and mental health: from intuitions to evidence', Acta Horticulturae 639 (XXVI International Horticultural Congress: Expanding roles for horticulture in improving human well-being and life quality)
- **14** Evidence from reviews by, for example, Garden Organic and Defra's Food Policy Unit
- 15 Richardson AJ and Montgomery P (2005), 'The Oxford-Durham Study: A randomized controlled trial of dietary coordination disorder supplementation with fatty acids in children with developmental coordination disorder', Pediatrics, 115: 1360-1366.
- 16 'The links between diet and behaviour: the influence of nutrition on mental health', report of an inquiry held by the Associate Parliamentary Food and Health Forum, January 2008

- **17** ibid
- **18** www.footprintconsulting.org/resources/44-resources/ 138-eac-sroi-report
- **19** http://news.bbc.co.uk/1/hi/health/8679192.stm
- 20 Department for Environment, Food and Rural Affairs (2002), Action plan to develop organic food and farming in England
- **21** Pearce, H (2005), Double Dividend? Promoting good nutrition and sustainable consumption through healthy school meals, Sustainable Consumption Roundtable
- 22 www.foresight.gov.uk/ourwork/activeprojects/obesity/ obesity.asp
- 23 www.schoolfoodtrust.org.uk/documents/economicimpact
- 24 School Food Trust/LACA (2009), 'School lunch take-up in England 2008-09'
- 25 The FFLP's survey was conducted in early October 2010 and involved 20 local authority school caterers and nine contract caterers
- 26 http://bigissues.nottinghamshire.gov.uk/index/bigissues/ improvement-programme/reviewing-services-andstructures/trading-services/initial-results
- 27 'Croydon Council not to re-tender school meals contract', Cost Sector Catering, 6 August 2010 (www.costsector catering.co.uk/online_article/croydon-council-not-tore-tender-school-meals-contract/11570)
- 28 'School meals in firing line as Suffolk plans outsourcing', Cost Sector Catering, 28 September 2010 (www.costsector catering.co.uk/online_article/school-meals-in-firing-lineas-suffolk-plans-outsourcing/12009)
- 29 'Consultation on the future distribution of school funding, 15 March 2010 to 7 June 2010: summary of consultation responses' (see www.education.gov.uk/consultations/index. cfm?action=conresults&consultationId=1709&external=no &menu=3)
- **30** For the schools receiving the lower premium and achieving 5% increase in take-up, this results in £19.75 per pupil
- 31 Unless a separate footnote indicates otherwise, all statistics in this section are derived from Diabetes UK (2010), Diabetes in the UK 2010: Key statistics on diabetes
- 32 Ehtisham S, Hattersley AT, Dunger DB et al (2004), 'Type 2 diabetes mellitus in UK children: an emerging problem'. Diabetic Medicine 17 (12); 867-871
- 33 Ehtisham S, Hattersley AT, Dunger DB et al (2004), 'First UK survey of paediatric type 2 diabetes and MODY', Archives of Disease in Childhood, 89 (6); 526-529
- **34** Based on a budget for the NHS of around £100 billion in 2008-09 (see www.nhs.uk/nhsengland/thenhs/about/ pages/overview.aspx)











