

## Review Article

# School food, politics and child health

Donald AP Bundy<sup>1,\*</sup>, Lesley J Drake<sup>2</sup> and Carmen Burbano<sup>3</sup>

<sup>1</sup>Human Development Network, The World Bank, 1818 H Street NW, Washington, DC 20433, USA; <sup>2</sup>The Partnership for Child Development, Department of Infectious Disease Epidemiology, Imperial College London, London, UK; <sup>3</sup>United Nations World Food Programme, Rome, Italy

Submitted 9 March 2012: Final revision received 9 August 2012: Accepted 5 September 2012: First published online 1 November 2012

### Abstract

**Objective:** An analysis undertaken jointly in 2009 by the UN World Food Programme, The Partnership for Child Development and the World Bank was published as *Rethinking School Feeding* to provide guidance on how to develop and implement effective school feeding programmes as a productive safety net and as part of the efforts to achieve Education for All. The present paper reflects on how understanding of school feeding has changed since that analysis.

**Design:** Data on school feeding programme outcomes were collected through a literature review. Regression models were used to analyse relationships between school feeding costs (from data that were collected), the per capita costs of primary education and Gross Domestic Product per capita. Data on the transition to national ownership, supply chains and country examples were collected through country case studies.

**Results:** School feeding programmes increase school attendance, cognition and educational achievement, as well as provide a transfer of resources to households with possible benefits to local agricultural production and local market development. Low-income countries exhibit large variations in school feeding costs, with concomitant opportunities for cost containment. Countries are increasingly looking to transition from externally supported projects to national programmes.

**Conclusions:** School feeding is now clearly evident as a major social programme in most countries with a global turnover in excess of \$US 100 billion. This argues for a continuing focus on the evidence base with a view to helping countries ensure that their programmes are as cost-effective as possible. Clear policy advice has never been more important.

### Keywords

Agriculture  
Child health  
Education  
Home Grown School Feeding  
Low income  
Policy  
School feeding programmes  
Schoolchildren  
Transition

School feeding has a remarkable political history. It was the first component of the UK government welfare reform in 1906. It is today among the most extensive of welfare programmes in the USA, while the programmes in Brazil and India, which every day feed 57 million and 130 million children respectively, have become the essence of presidential elections.

In 2009, in an attempt to better understand the political, economic and developmental dimensions of school feeding in today's world, an analysis was undertaken jointly by the UN World Food Programme (WFP), The Partnership for Child Development (PCD) and the World Bank. That analysis was published as *Rethinking School Feeding*<sup>(1)</sup>. The present paper reflects on how understanding of school feeding programmes has changed since that analysis.

### Rethinking school feeding

The overall objective of the original analysis was to provide guidance on how to develop and implement effective school feeding programmes; both in the context of a productive safety net, as part of the response to the social shocks of the global financial crisis, as well as a fiscally sustainable investment in human capital, as part of long-term global efforts to achieve Education for All (EFA) and to provide social protection for the poor.

The analysis was initiated in response to enhanced demand for school feeding programmes from low-income countries affected by the social shocks of the global crises in 2008, and focused first on the role of school feeding as a social safety net. This proved to be too narrow a context, and the analyses evolved to address

\*Corresponding author: Email donbundy@worldbank.org

the longer-term implications for social protection and the development of human capital as part of national policy.

This shift in emphasis came about because the available data suggest that today – perhaps for the first time in history – every country for which we have information is seeking to provide food, in some way and at some scale, to its schoolchildren. The coverage is most complete in both high- and middle-income countries – indeed, it seems that most countries that can afford to provide food for their schoolchildren do so. But where the need is greatest – in terms of hunger, poverty and poor social indicators – the programmes tend to be the smallest, although usually targeted to the most food-insecure regions. These programmes are also those most reliant on external support, and nearly all are supported by WFP.

The key issue is then not whether countries will implement school feeding programmes, but how and with what objective. The near universality of school feeding provides important opportunities for WFP, the World Bank and other development partners to assist governments in rolling out productive safety nets as part of the response to current global crises and also to sow the seeds for school feeding programmes to transition into fiscally sustainable investments in human capital.

The book *Rethinking School Feeding* was published in English and has subsequently been republished by the governments of the Russian Federation and the Republic of China, in both cases in parallel with national efforts to develop effective, local school feeding programmes. The book has also been picked up by commercial publishing houses in France and Spain. Recently the Brazil school feeding centre has begun translation into Portuguese, while the United Arab Emirates is supporting the preparation of a Gulf States edition in Arabic. We take this as an indication of the very wide interest in this topic.

Making the analysis more generally available is useful, but more important is the way that the analyses have spun off other operational and analytical aspects of understanding school feeding. The following section reviews some of the highlights of the findings over the last few years.

### The benefits of school feeding programmes

School feeding programmes provide an explicit or implicit transfer to households of the value of the food distributed. The programmes are relatively easy to scale up in a crisis and can provide a benefit per household of more than 10% of household expenditures, even more in the case of take-home rations (where families are given food if their children attend school)<sup>(1)</sup>. In many contexts, well-designed school feeding programmes can be targeted moderately accurately, although rarely so effectively as the most progressive of cash transfers<sup>(2)</sup>.

In the poorest countries, where school enrolment is low, school feeding may not reach the poorest people,

but in these settings alternative safety net options are often quite limited and geographically targeted expansion of school feeding may still provide the best option for rapid scale-up of safety nets. Targeted take-home rations may provide somewhat more progressive outcomes. Further research is required to assess the longer-term relative merits of school feeding *v.* other social safety net instruments in these situations. It is worth noting, however, that the most widely cited, exemplary conditional cash transfer (CCT) programmes in Brazil and Mexico both have parallel school feeding programmes to reach the poorest of the poor.

There is evidence that school feeding programmes may increase school enrolment<sup>(3,4)</sup>, attendance<sup>(5–7)</sup>, cognition<sup>(7–9)</sup> and educational achievement<sup>(3,10,11)</sup>, particularly if supported by complementary actions such as deworming and micronutrient fortification or supplementation<sup>(12–14)</sup>. In many cases the programmes have a strong gender dimension<sup>(15)</sup>, especially where they target girls' education, and may also be used to benefit specifically the poorest and most vulnerable children. What is less clear is the relative scale of the benefit with the different school feeding modalities, and there is a notable lack of engagement of educators on research around these issues.

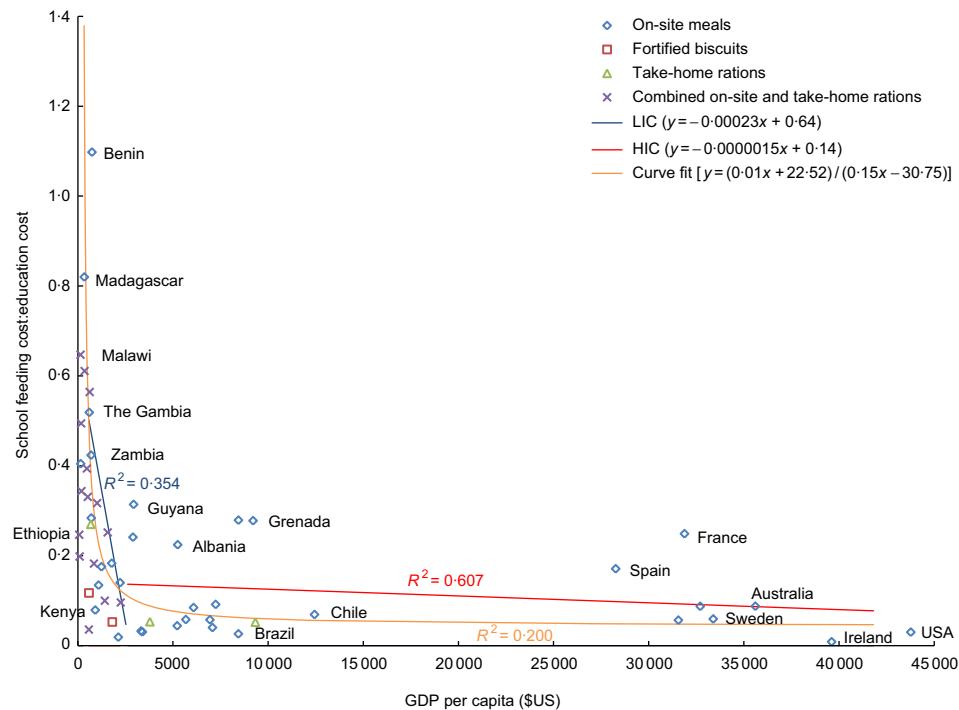
The potential education benefits of the programmes are a strong justification for the education sector to own and implement the programmes, while these same education outcomes contribute to the incentive compatibility of the programmes for social protection. Policy analysis also shows that the effectiveness and sustainability of school feeding programmes are dependent upon embedding the programmes within education sector policy. Hence, the value of school feeding as a safety net, and the motivation of the education sector to implement the programmes, are both enhanced by the extent to which there are education benefits.

Well-designed school feeding programmes, which include micronutrient fortification and deworming, can provide nutritional benefits and should complement and not compete with nutrition programmes for younger children, which remain a clear priority for targeting malnutrition overall.

### Prioritizing the multiple potential benefits of school feeding programmes

A recent review of the multiple benefits of school feeding programmes has sought to identify a hierarchy of outcomes, based on cost and effectiveness<sup>(16)</sup>.

The review addressed whether school feeding is among the best investments in nutrition, and concluded that despite new evidence indicating favourable externalities to siblings of students and the clear benefit in addressing hunger in schoolchildren, the fair answer is that school feeding would not be among the first choices for a nutrition



**Fig. 1** (colour online) Ratio of per child cost of school feeding in relation to per child cost of basic education v. Gross Domestic Product (GDP) per capita in low-income countries (LIC) and middle- and high-income countries (HIC). Figure taken from Bundy *et al.*<sup>(1)</sup>, *Rethinking School Feeding*, p. 37. GDP per capita (purchasing power parity, constant 2005 international dollars) and the education costs per child are from the UNESCO Institute for Statistics, and the school feeding costs per child were calculated from country programme documents and World Food Programme reports

intervention. While school feeding can provide iron and other key micronutrients, these programmes are not designed to address the most critical nutritional constraints in low-income settings simply because they are not targeted at the most vulnerable period in child development, which is between conception and 2 years of age.

Similarly, school feeding is not the best way to use funds for education; however, the answer is more nuanced. School feeding is clearly not a substitute for a well-organized education system and teacher performance – these would be the first choice for an education investment. However, there is extensive evidence that school feeding can complement a good education programme. So although school feeding may not be the best education response it may be an important element in achieving an effective education system.

As shown in Fig. 1, the ratio of school feeding cost to basic education cost declines rapidly with rising Gross Domestic Product per capita, showing remarkable homogeneity around 10% to 20% for middle- and high-income countries. For low-income countries the ratio is the highest, in some cases with the costs per capita of school feeding equalling or exceeding the costs of education. In practice, most of the costs of school feeding in low-income countries are met through external donations, which distort the ratios in these countries. An important consequence of this is that there are few incentives for low-income countries to rein in their school

feeding costs, and as a result the withdrawal of food aid can often leave them with unsustainable programmes. This is another powerful reason for moving towards transition to locally sustained programmes.

The review does suggest that school feeding is quite likely a plausible candidate for a social protection investment on par with CCT programmes. School feeding can increase human capital investments while also providing support to poor households. Thus, it serves as a support to current poverty reduction while making the need for future transfers and assistance less likely. The dual objectives of raising current consumption while promoting investments, however, make it difficult to compare outcomes of either CCT programmes or school feeding with direct investments.

There remain important research questions, however, since the value of transfers does not easily aggregate with multiple benefits in a benefit–cost assessment. For one thing, such a summation requires a quantification of the weight society puts on consumption of the poor relative to that of the average citizen. Without this calculation, a direct comparison of demand-side interventions for education or direct investments in health with a school feeding transfer does not put both categories of expenditures on the same metric.

Overall, it seems likely that the combined benefits for social protection, education and nutrition would make the investment in school feeding more attractive, but the tools to assess this simply do not exist at present.

### **New policy decisions by the education sector**

Perhaps because the education sector is typically the implementing agency for school feeding programmes, that sector has moved the most in terms of defining the way forward for its support for school feeding in low-income countries.

#### ***The High Level Group on Education for All***

In February 2010, the High Level Group on Education for All – the apex think-tank for education policy in low-income countries, comprising education ministers and heads of development in partner agencies supporting the education sector – held its ninth annual meeting at the African Union headquarters in Addis Ababa. It reviewed a report that it had commissioned on the role of health and nutrition in education, which was later published as *Rethinking School Health*<sup>(17)</sup>. In the resulting Addis Ababa Declaration, the meeting recognized that<sup>(18)</sup>:

Barriers of cost, distance and discrimination continue to deter millions of poor and marginalized children from attending school. In addition, poor health, malnutrition and diseases ... affecting hundreds of millions of poor children ... reduce enrolment, increase absenteeism and diminish cognitive development and learning. [As a result] more and more countries are implementing cost-effective, evidence-based policies and interventions to achieve EFA ... including school fee abolition, ECD [Early Child Development] programmes, targeted school health and feeding programmes.

The Declaration called upon EFA partners to intensify efforts to support initiatives targeted at the most marginalized, such as cash transfers, school feeding, scholarships and gender-specific interventions.

#### ***A consensus approach to benchmarking school feeding systems in the education sector***

The SABER\* approach (System Assessment and Benchmarking for Education Results) is an exercise by the World Bank's Human Development Network (HDNED), aimed at benchmarking all education sub-systems<sup>(19)</sup>. The approach arose out of discussions with governments and development partners during the renewal of the World Bank Education Strategy. The SABER approach provides a comprehensive toolkit including: (i) a framework-rubric, which provides standards of good practice against which countries can rate themselves; and (ii) diagnostic tools to help education stakeholders assess where a particular country stands in terms of its national policy framework. The expectation is that such a resource will facilitate comparative policy analysis, identify the

key areas to focus investment and assist in disseminating good practice.

A framework-rubric has been developed for school feeding programmes based on experience from benchmarking other education sub-systems and existing international consensus, as well as advice from an Advisory Committee including representatives of governments, the private sector, the International Food Policy Research Institute, the London School of Hygiene and Tropical Medicine, PCD, Save the Children, UNICEF, the World Bank, WFP and WHO. The diagnostic tools, in the form of questionnaires, have also been developed<sup>(19)</sup>. The approach has been used in more than twenty countries in Africa, through a regional meeting of the Economic Community of West African States (ECOWAS) and the East African Community (EAS), as well as in regional discussions of Caribbean Community (CARICOM) countries in the Caribbean and with specific countries, including Sri Lanka in South Asia. The SABER approach is intended to assist countries as they work towards a transition to more sustainable programmes.

#### **A new policy direction for the World Food Programme**

In 2009 WFP announced a new direction in its policy and support for school feeding. The new policy, approved by WFP's Executive Board, was largely based on the findings of *Rethinking School Feeding*, published earlier that year. In the new policy, WFP committed to moving away from a project-based school feeding approach to a more long-term, sustainable approach to programmes. This included a renewed emphasis on government ownership, which meant putting in place transition strategies with all countries in which WFP was running school feeding operations. It also included a strong focus on cost containment of programmes, local procurement and the link with smallholder farming, and a commitment to better and more nutritious food baskets. The policy also committed WFP to include deworming in all areas with high prevalence of worm infection. The policy essentially saw WFP as a provider of time-bound support to governments for school feeding with the long-term objective of phasing out its assistance, leaving behind sustainable, cost-effective national school feeding programmes. The policy entered into effect and is mandatory in all WFP country offices with school feeding operations.

#### **Facilitating the transition to effective and sustainable school feeding programmes**

The concept of a school feeding 'exit strategy' has tended to confound thinking about the longer-term future of school feeding programmes. The analysis in 2009 showed that countries do not seek to exit from providing food to their schoolchildren, but rather to transition from externally

\* SABER: <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXT EDUCATION/0,contentMDK:22845903~menuPK:282391~pagePK:148956~piPK:216618~theSitePK:282386,00.html>

supported projects to national programmes<sup>(1)</sup>. For twenty-eight countries previously assisted by WFP this has already happened.

The review in 2009 highlighted three main findings. First, school feeding programmes in low-income countries exhibit large variation in cost; with concomitant opportunities for cost containment. Second, as countries grow richer, school feeding costs become a much smaller proportion of the investment in education (Fig. 1). For example, in Zambia the cost of school feeding is about 50% of annual per capita costs for primary education; in Ireland it is only 10%. Further analysis is required to define these relationships, but supporting countries to maintain an investment in school feeding through this transition was considered a possible key role for development partners. Third, the main preconditions for the transition to sustainable national programmes were: mainstreaming school feeding in national policies and plans, especially education sector plans; identifying national sources of financing; and expanding national implementation capacity. Mainstreaming a development policy for school feeding into national education sector plans offered the added advantage of aligning support for school feeding with the processes already established to harmonize development partner support for the Global Partnership for Education (formerly the EFA-Fast Track Initiative).

New data from a recent survey of seventy-eight countries where WFP has presence indicate that the transition is well underway in many countries (C Burbano, unpublished results). Out of seventy-four countries with school feeding programmes, 18% have school feeding programmes completely financed and managed by the government either with no or almost no external support, meaning that they have completed the transition; while 32% have already started government-financed and -implemented programmes in complementing that of WFP, meaning that they are in the middle of transition. The remaining 45% depend on WFP or other external partners for the funding and implementation of the programme, meaning that these countries are at the initial stages of transition. More analysis needs to be made to clarify some of the pending questions with regard to transition, but this preliminary analysis shows that almost half of the countries with school feeding programmes are at the middle or final stages of transition.

Since 2009, WFP, the World Bank and PCD have continued to analyse the transition to identify best practices and lessons learned from countries which have already gone through the transition process. The objective has been to support low-income countries currently undergoing a transition process to systematically plan for a sustainable and cost-efficient move to government-owned programmes. The following key policy issues have emerged.

*The transition should be seen as a learning process.* Findings from subsequent case studies reveal that the process of transitioning from a donor-driven programme

to a nationally owned one is not always smooth, although there are plenty of cases where this has been achieved. In Ecuador and El Salvador, for example, the transition happened over a period of about 15 years during which there was constant planning and communication between the government and the implementing entity (WFP)<sup>(1)</sup>. The programmes in both countries underwent significant changes. In both cases the food basket and targeting mechanisms were changed several times until an appropriate modality was found. In El Salvador the programme shifted from providing hot lunches, to snacks, to porridge and finally back to hot lunches. In Ecuador, the programme was initially targeted geographically using poverty indicators and was later universalized, while the food basket modified from providing breakfast and lunch, to only providing breakfast. This indicates that plans for transition may need to include a learning period where different modalities may be tested through a trial-and-error process.

*Government financial capacity is a key precondition for sustainability.* In all cases of successful transitions the government had the financial capacity to cover the cost of the programmes and most of them were middle-income countries. This confirms the findings of 2009 that low-income countries may have a harder time finding resources for these programmes and that there is more fiscal space once countries move to middle-income status. This raises the question of whether it is reasonable to expect low-income countries to pay for the programmes. One option may be to have short-term agreements (e.g. 5 years) with donors in which they may agree to finance the programme temporarily if there are transition plans in place for the near future. This has already occurred in Laos, for example, where the Global Partnership for Education funds have been allocated to school feeding as part of a transition strategy<sup>(20)</sup>.

*Political champions and local leadership are key to success.* This was not identified as a finding in the 2009 study but subsequent case studies indicate that champions help generate political will at the top, where funding and policy decisions are made. In the case of El Salvador, it was the First Lady and subsequently the Minister of Education, who over a period of 10 years made the programme a national priority. In Ecuador and Brazil it was the Presidents who integrated the programme into the wider social protection and hunger reduction frameworks, and in Nigeria's Osun State the Governor has been the main impulse behind the programme.

*There is a need for robust policy and institutional frameworks.* Programmes that have a legal basis are, by definition, institutionalized and more sustainable. Recent case studies and work with countries undergoing transition have pointed to the fact that policy frameworks evolve and strengthen over time. In Ecuador, for example, the programme started with a Ministerial Decree in 1999 and was later included in the country's new education law and

national nutrition and development plans in 2010. In other countries, the government started financing and implementing the programme before it had a legal or policy framework, often on a pilot basis, as is the case of Ghana, Kenya and Mali. Sometimes a successful pilot may garner enough political will for a policy or a law on school feeding, and conversely a strong policy or decree may provide the resources and sustainability that the programme needs for the future.

*Transition agreements with donors and partners are essential.* Not all transitions from donor-driven programmes to national programmes have been successful. The experiences of Namibia and Jordan are examples of transitions that were a bit bumpier. In both cases external support was phased out with no arrangement with the government for a transition to national ownership. The result was that thousands of children, who were presumably still in need, were left without support for several years until both countries started up their own programmes. This tends to confirm the findings of the 2009 study: it is important to design long-term sustainability into programmes from their inception and to revisit programmes as they evolve.

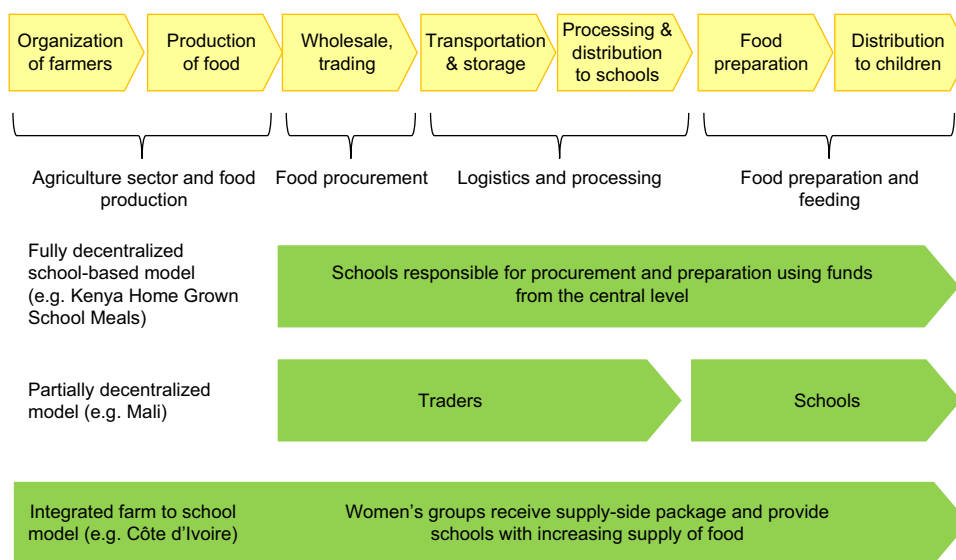
### The role of Home Grown School Feeding in sustainability

Countries that have made a successful transition have often explored linking school feeding programmes to agriculture development – an approach also known as ‘Home Grown School Feeding’ (HGSF)<sup>(21–23)</sup>. HGSF is a programme which provides food produced and purchased within a country. This is most clear for middle-income countries such as Brazil, but evidence from Côte d’Ivoire,

Ghana, Kenya and Nigeria provides increasing support for the concept of linking smallholder production with school feeding demand to create new markets in low-income countries<sup>(24)</sup>.

The 2009 analysis showed that since 2003 African governments decided to include locally sourced school feeding programmes as a key intervention within the food security pillar of the Comprehensive Africa Agriculture Development Programme (CAADP)<sup>(25)</sup>. That same year, the New Partnership for Africa’s Development (NEPAD) launched a pilot HGSF programme<sup>(26)</sup>. After the publication of *Rethinking School Feeding*, PCD received funding from the Bill & Melinda Gates Foundation to support countries linking school feeding to local agricultural production and small farmers. PCD has supported several countries in Africa to assess the potential of implementing HGSF and put in place strategies to address this goal. It has also focused on research related to school feeding, case studies, monitoring and evaluation, and the design and implementation of three country impact evaluations in Kenya, Ghana and Mali<sup>(27)</sup>.

HGSF programmes provide an integrated framework with potentially multiple impacts across agriculture, health, nutrition and education, but even with recent efforts there are several important gaps in the knowledge on optimal implementation and measures of effectiveness of HGSF. HGSF programmes are complex and they exhibit different, context-specific models or configurations. Different approaches can even coexist within the same country, where, for instance, programme implementation is owned by decentralized institutions (e.g. individual states in Brazil or India) or where agencies like WFP are complementing the national programmes (e.g. Ghana and Kenya). Figure 2 illustrates a stylized supply chain linking food production to food distribution in



**Fig. 2** (colour online) Stylized supply chain linking food production to food distribution in schools, along with examples of different implementation models in three countries<sup>(23)</sup>

schools shown alongside examples of different implementation models in three countries<sup>(23)</sup>.

The emerging policy consensus among the stakeholders involved in the scoping analysis that has been underway since 2009 suggests that HGFS in sub-Saharan Africa is a key tool in the transition towards nationally owned school feeding programmes. Three distinct beneficiary groups were identified for HGFS: schoolchildren, smallholder farmers and community-based groups delivering support services to school feeding. At impact level, HGFS had the potential to improve food security for smallholders and other community groups; however, in order for this to happen an explicit programme component, other than food procurement, was required to support agriculture and community development. This component at a minimum included providing sensitization campaigns around improved production practices, income-generation activities in support of school feeding and on improved nutrition practices. This perspective confirms the key role of Ministries of Agriculture, the relevance of HGFS as a key intervention within Pillar 3 of the CAADP framework and the importance of mainstreaming HGFS within country-level CAADP compacts. The evidence base of the impact of HGFS on food security, alongside the associated incremental costs, however, is still missing and will need to be built to inform policy and programme design.

This concept as a means of integrated agricultural development is hardly new; however, the presentation of HGFS as a means of improving the sustainability of these programmes provides a new set of coordination issues. There are several key areas that require specific attention to move forward, especially issues of programme design, but perhaps the largest challenge is to develop new ways for the agriculture and education sectors to work together and the construction of a coherent evidence base from which to evaluate specific outcomes within each sphere. This is a particular concern, since the cost of procuring locally could be higher than procuring food centrally because of the loss of economies of scale. While the added cost could be offset by the expected benefits to the agriculture sector, the benefits might be less clear to the education sector. These cross-sectoral issues are emerging as the new challenge for policy development in moving forward.

### Moving forward

It is now clear that school feeding is a major social programme in most countries, with a global turnover in excess of \$US 100 billion. Even in low-income countries these programmes are popular and constitute a significant component of public sector investment. This argues for a continuing focus on the evidence base with a view to helping countries ensure that their programmes are as cost-effective as possible. Clear policy advice has never been more important.

It is also apparent that while the evidence base for school feeding on which policy can be based has grown exponentially over the last few years, there remain important gaps. We do not have an agreed approach to compare the benefit–cost ratios of single output programmes with school feeding programmes with multiple benefits. We cannot easily estimate the trade-offs and returns to different interventions at different stages of a child's development. We do not know how best to build cross-sectoral incentives that will, for example, help the education and health sectors respond to the community benefits of a stronger agricultural sector. These are important policy issues that need to be resolved.

Finally, given the overall lack of evidence and the benefits of sharing common experiences, there has been far too little contact between policy makers for school feeding programmes in rich and poor countries. There is certainly much to be shared, and much to be learned in both directions. The meeting held by the School Food Trust that led to this publication, and the publication itself, may do a great deal to begin to bridge that divide.

### Acknowledgements

*Sources of funding:* This research received no specific grant from any funding agency in the public, commercial or not-for-profit sector. *Conflict of interest declaration:* The authors declare no conflicts of interest with respect to this research. *Ethics:* No ethical approval was required. *Authors' contributions:* Each author contributed equally to the drafting of the manuscript. Each author has also seen and approved the contents of the submitted manuscript. *Acknowledgements:* Figure 2 and details on linking school feeding programmes with agriculture are taken with acknowledgement from Gelli<sup>(23)</sup> and are included in a forthcoming PhD thesis by Aulo Gelli (PCD). The authors also wish to acknowledge Kristie Neeser (PCD) for researching the citations and Anastasia Said (PCD) for editing the manuscript.

### References

1. Bundy DAP, Burbano C, Grosh M *et al.* (2009) *Rethinking School Feeding: Social Safety Nets, Child Development, and the Education Sector. Joint Publication of the World Food Programme and The World Bank, Directions in Development.* Washington, DC: The World Bank.
2. Lindert K, Skoufias E & Shapiro J (2006) How effectively do public transfers redistribute income in LAC?. In *Redistributing Income to the Poor and to the Rich: Public Transfers in Latin America and the Caribbean*, pp. 1–60 [K Lindert, E Skoufias and J Shapiro, editors]. Washington, DC: The World Bank.
3. Ahmed AU (2004) *Impact of Feeding Children in School: Evidence from Bangladesh.* Washington, DC: International Food Policy Research Institute.
4. Gelli A, Meir U & Espejo F (2007) Does provision of food in school increase girls' enrollment? Evidence from schools in Sub-Saharan Africa. *Food Nutr Bull* **28**, 149–155.

5. Jacoby E, Cueto S & Pollitt E (1996) Benefits of a school breakfast programme among Andean children in Huaraz, Peru. *Food Nutr Bull* **17**, 54–64.
6. Powell CA, Walker SP, Chang SM *et al.* (1998) Nutrition and education: a randomized trial of the effects of breakfast in rural primary school children. *Am J Clin Nutr* **68**, 873–879.
7. Kristjansson E, Robinson V, Petticrew M *et al.* (2007) School feeding for improving the physical and psychosocial health of disadvantaged elementary school children. *Cochrane Database Syst Rev* issue 1, CD004676.
8. Whaley SE, Sigman M, Neumann C *et al.* (2003) The impact of dietary intervention on the cognitive development of Kenyan school children. *J Nutr* **133**, 11 Suppl. 2, 3965S–3971S.
9. Jukes MCH, Drake LJ & Bundy DAP (2008) *School Health, Nutrition and Education for All: Levelling the Playing Field*. Wallingford: CABI Publishing.
10. Tan J-P, Lane J & Lassibille G (1999) Student outcomes in Philippine elementary schools: an evaluation of four experiments. *World Bank Econ Rev* **13**, 493–502.
11. Adelman S, Alderman H, Gilligan DO *et al.* (2008) *The Impact of Alternative Food for Education Programs on Learning Achievement and Cognitive Development in Northern Uganda*. Washington, DC: International Food Policy Research Institute.
12. Simeon DT, Grantham-McGregor SM & Wong MS (1995) *Trichuris trichiura* infection and cognition in children: results of a randomized clinical trial. *Parasitology* **110**, 457–464.
13. van Stuijvenberg ME, Kvalsvig JD, Faber M *et al.* (1999) Effect of iron-, iodine-, and  $\beta$ -carotene-fortified biscuits on the micronutrient status of primary school children: a randomized controlled trial. *Am J Clin Nutr* **69**, 497–503.
14. Jukes MCH, Nokes CA, Alcock KJ *et al.* (2002) Heavy schistosomiasis associated with poor short-term memory and slower reaction times in Tanzanian schoolchildren. *Trop Med Int Health* **7**, 104–117.
15. Drèze J & Kingdon G (2001) School participation in rural India. *Rev Dev Econ* **5**, 1–24.
16. Alderman H & Bundy DAP (2011) *School Feeding Programs and Development: Are We Framing the Question Correctly?* *World Bank Research Observer*. Washington, DC: The World Bank.
17. Bundy DAP (2011) *Rethinking School Health: A Key Component of Education for All*. Washington, DC: The World Bank, Directions in Development.
18. United Nations Educational, Scientific and Cultural Organization (2010) Addis Ababa Declaration. *Ninth Meeting of the High-Level Group on Education for All*, 23–25 February 2010, Addis Ababa, Ethiopia. Addis Ababa: UNESCO; available at <http://unesdoc.unesco.org/images/0018/001871/187149e.pdf>
19. World Bank (2012) *System Assessment and Benchmarking for Education Results (SABER)*. Washington, DC: The World Bank; available at <http://go.worldbank.org/NK2EK7MKV0>
20. Ministry of Education, Government of Lao PDR (2009) *Education Sector Development Framework 2009–2015*. Vientiane: Ministry of Education; available at [http://www.globalpartnership.org/media/library/Final\\_ESDF\\_19\\_January\\_Ready\\_for\\_FTI.pdf](http://www.globalpartnership.org/media/library/Final_ESDF_19_January_Ready_for_FTI.pdf)
21. Gelli A, Neeser K & Drake LJ (2010) *Home Grown School Feeding: Linking Smallholder Agriculture to School Food Provision*. London: Partnership for Child Development.
22. Espejo F, Burbano C & Galliano E (2009) *Home-Grown School Feeding: A Framework For Action*. Rome: United Nations World Food Programme.
23. Gelli A (2011) Exploring different contexts, different programmes. In *Linking School Feeding with Agriculture Development*, p. 5 [PCD, editor] London: Partnership for Child Development.
24. Sumberg J & Sabates-Wheeler R (2011) Linking agricultural development to school feeding in sub-Saharan Africa: theoretical perspectives. *Food Policy* **36**, 341–349.
25. New Partnership for Africa's Development (2009) *Comprehensive Africa Agriculture Development Programme (CAADP) Pillar III Framework for African Food Security (FAFS)*. Midrand, South Africa: NEPAD; available at <http://www.nepad-caadp.net/pdf/CAADP%20FAFS%20BROCHURE%20indd.pdf>
26. New Partnership for Africa's Development (2003) *The NEPAD Home-Grown School Feeding Programme: A Concept Note*. Midrand, South Africa: NEPAD.
27. Partnership for Child Development (2012) *Home Grown School Feeding*. London: PCD; available at <http://hgsf-global.org/>