



Seasonality Revisited

Perspectives on Seasonal Poverty



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**School Feeding, seasonality
and schooling outcomes:
A case study from Malawi**

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School Feeding, seasonality and schooling outcomes: A case study from Malawi

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Abstract

School feeding programmes are effective social protection tools that have the potential to reach the most vulnerable households. The programmes transfer resources implicitly or explicitly to poor households of the value of the food provided, therefore offsetting the costs of sending the child to school. School feeding can increase school participation and support learning in the classroom by relieving short-term hunger and reducing micronutrient deficiencies, two barriers to healthy and productive schooling affecting large numbers of school-age children living in poverty and food insecurity.

Different programme experiences highlight the links between seasonality and access to school, particularly affecting the schooling of vulnerable children. For instance, changing labour costs associated with the agricultural cycle as well as other local socio-cultural practices have an impact on the schooling of girls, particularly those in the higher grades. However, the complex nature of both food insecurity and schooling decisions in vulnerable households requires a nuanced approach to the design of interventions aimed to address seasonality and its effects on access to education.

School feeding has been successfully designed in some contexts to respond to these issues by, for example, providing take home rations to girls during harvest or lean seasons that are conditional upon attendance. This approach, however, requires a careful analysis of the trade-offs between issues of cost-effectiveness and equity. In this paper, by looking at WFP monitoring and evaluation data including school level surveys, we assess seasonal trends in school participation in rural areas of Malawi, where school feeding programmes have been introduced to mitigate impacts of food insecurity on schooling outcomes. In addition, take home rations for girls, conditional to school attendance in the lean season have been used for some years to reduce gender disparities in school participation. We also explore some of the potential trade-offs associated with linking food based transfers with local purchases, where the demand from school feeding can be used to provide a stable market outlet for smallholder farmer production.

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Introduction

Enrolling children in school is only the first step in achieving the Education For All and Millennium Development Goals. Once they are enrolled, vulnerable children are likely to require support throughout their schooling in order to minimise the risk of absenteeism and ultimately drop-out. A joint World Bank and WFP analysis reviewing the current state of the evidence base concludes that school feeding programmes can be effective social protection tools that have the potential to reach the most vulnerable households. The programmes transfer resources implicitly or explicitly to poor households of the value of the food provided, therefore offsetting the costs of sending the child to school and thus supporting school participation. There is robust evidence that school feeding can also support learning in the classroom by relieving short-term hunger and reducing micronutrient deficiencies, especially when the programme is combined with food fortification and deworming (Bundy et al., 2009). However, the recent analysis also highlights the complex nature of both food insecurity and schooling decisions in vulnerable households, identifying a more nuanced approach to the design and implementation of school feeding interventions. It is critical that these programmes be grounded within a careful analysis of the local context, and potential trade-offs between the different objectives and institutional set-ups involved in school feeding as a whole³.

Nonetheless, school feeding interventions are very popular, and have been designed to stabilise attendance and to reduce drop-out in vulnerable, food insecure areas. Different programme experiences highlight the links between seasonality and access to school, particularly affecting the schooling of vulnerable children. Variations in pupil attendance can be due to many different factors, many of which are beyond the immediate objectives of school feeding. For instance, changing labour costs associated with the agricultural cycle as well as other local socio-cultural practices can have a negative impact on the schooling of girls, particularly those in the higher grades. In rural areas school children may end up working in the fields at harvest time - or in the dry season they will have to walk the cattle to distant pastures, rather than attend school. A general observation has been that attendance rates during the lean season tend to drop in rural areas. Cultural habits like girls' circumcision, or other initiation rites, may also prevent children from going to school during particular months of the school year. In certain contexts, providing an incentive to families and children to attend school can have positive effects on improving and stabilizing attendance rates, particularly for girls (Drèze & Kingdon, Ahmed & Del Ninno). The take-home ration modality of school feeding, in particular, is conditional on a pupil actually attending school above a certain "suitable" threshold, usually set at 80 percent of attendance days in a given school month.

However, there is a very limited evidence base in the literature on the links between school feeding and seasonal school attendance patterns. One study used WFP school level surveys to assess seasonal patterns in school participation in assisted areas, using data collected between 2005 and 2006, from 12 countries (6 in sub-Saharan Africa and 6 in South Asia) and 2,866 WFP-assisted schools. The study analysed attendance rates over one high and one low attendance months of the school year (WFP, 2007). Results showed that WFP-assisted schools were generally found to have very high attendance rates during the two surveyed months for both boys and girls. The "seasonal gap" between high and low attendance months was small (3 points for boys and 4 for girls) but statistically significant ($p < .005$). However, markedly lower seasonal attendance gaps, 8 points lower in the first year and 4 in the following years, were observed for girls receiving a combination of on-site meals and take-home rations compared to those receiving on-site meals alone. Girls

³ See Bundy et al. (2009) for a more detailed description of the benefits, main criticisms and trade-offs involved in school feeding programmes.

receiving combined on-site meals and take-home rations also had lower seasonal gaps than boys in the first year of assistance, and identical gaps to boys after the first year of assistance. These findings suggested that school feeding programmes, and particularly take-home rations, can be associated with reduced seasonal attendance gaps.

In this paper we first present an overview of the WFP School Feeding programme in Malawi, where on-site feeding has been introduced to mitigate impacts of food insecurity on schooling outcomes. In addition, take home rations for girls and orphans and vulnerable children (OVCs), conditional to school attendance in the lean season have been used for some years to reduce inequalities in school participation. We report findings of a school level survey conducted in 2007, and then assess seasonal trends in school participation in schools with and without School Feeding. We also explore some of the potential trade-offs associated with linking food based transfers with local purchases, where the demand from school feeding can be used to provide a stable market outlet for smallholder farmer production.

Access to education and seasonal patterns in Malawi

Access to primary education in Malawi has increased since the abolition of school fees in 1994 but the educational system still faces many challenges. Although the national net enrolment rate is high compared to regional standards – 80 percent (National Statistics Office, 2005) - there are problems related to high absenteeism, repetition and drop out rates, combined with issues related to poor infrastructure and quality of education.

School attendance is influenced by seasonal, social, cultural as well as economic factors. A WFP school feeding appraisal mission in late 2007 found that erratic attendance patterns increase in Malawi during the harvest months of May, June and July and then again during the lean season January and February (Burbano, 2007). Children are withdrawn temporarily from school in order to help their parents during the harvest period. Girls are often required in the household to take care of younger siblings while the rest of the family tends to the field. This illustrates both the impact of the agricultural cycle on school attendance and the effects of food insecurity.

A study commissioned by UNICEF during the 2002 hunger crisis in Malawi found that food shortages increased student absenteeism rates, particularly in the peak food shortage months, promoted erratic student attendance and increased drop-out rates (Center for Social Research, 2002). According to the study, 12 percent of primary school children had dropped out of school in 2001 and 9 percent in 2002, specifically due to food shortages. The study found that children living in rural areas were 30 percent more likely to drop out of school due to food shortages than children living in urban areas. Similarly, orphans are noticeably more at risk of dropping out of school than non-orphans. In terms of erratic school attendance, the study found that 11 and 10 percent of primary school students attended school erratically at some time in the 2001 and 2002 specifically due to food shortages. Additionally, food shortages were the main reason why children were absent from school in 2001 and 2002 (77 percent of the cases).

Primary Education, Malawi – Basic Statistics

- Primary school pupils: 3,306,926 (1,653,894 boys, 1,653,032 girls)
- Teachers: 42,330 (37,412 trained)
- Primary schools: 5,307 (5,059 rural, 248 urban)

Number of primary schools by type:

- Government schools: 1928
- Private schools: 221
- Religious schools: 3158
- Teacher pupil ratio 1:78 (qualified 1:88)
- Pupil class room ratio 1:104

Source: Ministry of Education, 2007

WFP school feeding interventions in Malawi

WFP has supported the government of Malawi with school feeding since 1999, in response to the effects of poverty and seasonal food insecurity on access to education. During the country's hunger crisis of 2002, WFP expanded its existing school feeding project at the request of the government to cover schools in the affected districts. In 2005/06 Malawi experienced another acute food crisis and declared a national food disaster in mid 2005. WFP responded by expanding its school feeding activities once again through an emergency school feeding operation. As a result, the number of children covered under WFP's school feeding programme in Malawi has progressively increased over the years, illustrating the recurring need for an intervention that tackles the effects of seasonal food insecurity on access to education. Currently WFP assists 635,000 pupils in 13 out of the 28 districts in Malawi with school snacks. In addition, take-home rations are provided to 114,300 girls and orphans and vulnerable children (OVC).

Children receive a mid-morning snack of 100 grams of corn soya blend (CSB; local name *likuni phala*). The snack provides 400 kcal or 22% of the daily energy requirements for school aged children, is fortified and is given before 10am to tackle short-term hunger. The take-home rations provide 12.5kg of maize per month and are distributed all year round conditional to attendance for children in standards 5 to 8 and in January to April for those in standards 1 to 4⁴. Deworming is provided to all school children receiving school feeding every year. The programme is implemented with the objectives of reducing drop-out and promoting regular attendance particularly among older students (standard 5-8), girls and orphans; increasing enrolment; and improving children's capacity to concentrate and learn. Take home rations are targeted to girls and orphans during the lean season with the specific objective of closing the seasonal gap, that is, mitigating the increase in absenteeism during the lean season.

A recent analysis of the full costs of School Feeding (Galloway et al., 2009) found that the average cost of providing on-site meals in Malawi standardised over a 200 feeding day year and a daily ration of 700 kcals was US\$ 59 per child per year, excluding the costs of the take home rations. This analysis captured costs at all implementation levels, including WFP, the Government counterpart, and the school level costs covered by the local community. WFP estimations on the costs of the programme are considerably lower, at US\$ 22 per child per year. Note that the full cost of the on-site meal is equivalent to about 70% of the estimated per capita cost of education (US\$ 87) which is in the high benchmark range for low-income countries.

School Feeding and seasonal changes in school attendance in Malawi

The results of a study of the outcomes of the take home rations programme in Malawi found considerable educational benefits in terms of school participation (Edstrom et al., 2008). Focussing on the educational perspective, the programme helped bridge the gender gap in education, with girls overtaking boys, with particular benefits in the higher primary grades.

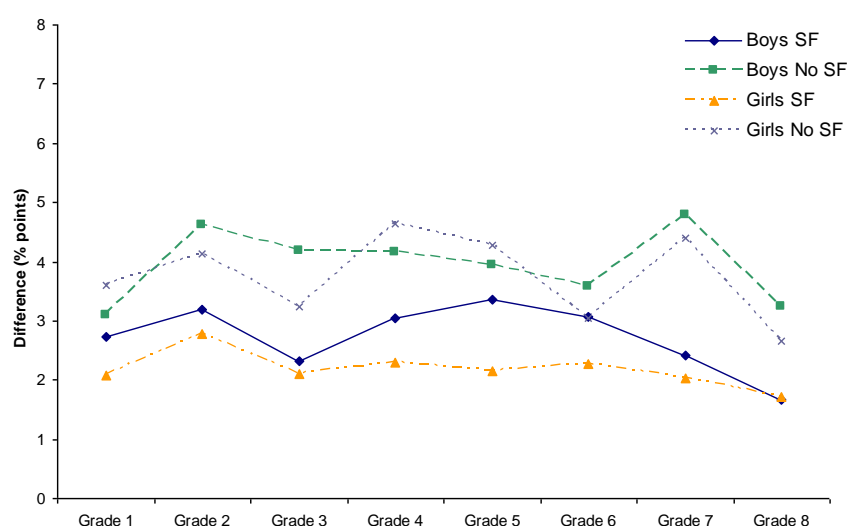
To date, the evaluations of school feeding in Malawi were not designed to assess differences in attendance in WFP assisted schools. To do so, in this paper we have analysed the data from a WFP School Feeding survey that was conducted in Malawi in October 2007. The sample frame consisted of all WFP assisted schools in Malawi (679 schools in total), and was stratified by length of programme, including those that were due to be targeted the following year (i.e. those that were, at the time, without school feeding). A total of 249 schools were randomly selected using probability proportional to size sampling

⁴ The provision of monthly THR changed from January 2008 with the commencement of DP 10581 so that girls and orphan boys (single and double) in standards 5 to 8 receive 12.5kg maize only in the lean season (January to April).

with total school enrolment providing the measure of size. As the full results of the survey are reported elsewhere (Tallant, 2008), in this analysis we focus only on assessing monthly attendance patterns in schools in Malawi with and without School Feeding.

Generally, survey results identified high monthly attendance rates, averaging over 90 percent for both boys and girls in both high and low attendance months in both WFP assisted and non-assisted schools. Attendance also appeared to be fairly stable across the primary school grades. We explored in more detail the differences between high and low attendance months in both groups of schools, with School Feeding and without. The analysis identified small, but generally statistically significant differences between high and low attendance months, of the order of about 2-5% points across the primary school grades, as shown in Figure 2. Interestingly these attendance differences, or “seasonal gaps”, were found to be significantly smaller in schools with School Feeding, particularly for girls in the higher grades as shown in Table 1.

Figure 1: Average seasonal differences in monthly school level attendance by gender and by school grade between schools with and without school feeding in Malawi



(Source: Data from WFP Malawi school feeding survey, 2007.)

Table 1: Differences in seasonal gaps in monthly attendance in schools with and without School Feeding

		Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8
Girls	Mean Δ (No SF-SF)	1.5	1.4	1.1	2.3	2.1	0.8	2.3	0.9
	Std. Err.	0.6	0.7	0.6	0.6	0.6	0.6	0.7	0.5
	P	0.01	0.05	0.05	0.00	0.00	0.16	0.00	0.05
Boys	Mean Δ (No SF- SF)	0.4	1.4	1.9	1.1	0.6	0.5	2.4	1.6
	Std. Err.	0.6	0.7	0.7	0.6	0.7	0.7	0.8	0.6
	P	0.51	0.04	0.01	0.09	0.42	0.47	0.00	0.01

Though small, at the school level, differences of about 1 percent in monthly attendance would, using a back of the envelope calculation, translate to over 230 pupil days of added schooling over a single month for an average school in Malawi (found to have in this data set enrolment of 1,158 pupils).

The school survey also included exercises with groups of pupils, and groups of parents and teachers that also explored the main factors affecting school participation. Groups of girl

pupils identified pregnancy and early marriage, the cost of schooling and parents' negative attitude towards education as the three main reasons for non-participation. The same factors were identified by groups of boys, although alternative employment was cited as a main factor instead of early marriage. The parent and teacher groups cited parents' negative attitude towards education, household economic commitments, cost of schooling, and pregnancy and early marriage for girls, as the main barriers to school participation.

School feeding, seasonality and local procurement

Linking school feeding programmes to local markets and agricultural production has been quite common in developed countries. A study conducted by WFP in 2008 and funded by the Bill and Melinda Gates Foundation, explored the feasibility of linking school feeding programs with local agricultural production in developing countries. Different experiences across the globe have demonstrated the synergies that exist between social protection tools like School Feeding and agriculture interventions (Sabates-Wheeler et al., 2008). The idea behind "home-grown" School Feeding is that by ensuring a regular demand on the local market, and if combined with local purchase of food, School Feeding also has the potential to support local agricultural production and the local economy.

The demand for food from the School Feeding programme can be estimated by multiplying the food ration by the number of feeding days and beneficiaries. In 2008 the School Feeding programme in Malawi resulted in a demand of approximately 11,558 MT of corn-soya blend (CSB) and 5,940 MT of maize. Data from the WFP Standard Project Reports for 2008 showed that approximately 8 percent of the CSB/ *likuni phala* used by School Feeding was locally purchased through cash donations to WFP, whilst 92 percent was received through in-kind contributions from the USA. A preliminary back of the envelope calculation based on WFP data suggests that the price per metric tonne was fairly comparable for the two sourcing modalities, confirming that in-kind donations tend to be on the whole less cost-efficient.

In theory, should more cash resources be available, increasing the amount of food that is purchased locally for the school feeding programme in Malawi could inject a significant amount of resources into the economy. There are, however, some considerations, the most important of which is the issue of seasonality and the availability of food in the country. First, purchasing high quantities of food during the lean season –when the availability of food in the market is low– may increase market prices having a negative effect on net buyers of food. Second, yearly harvest failures can significantly affect the stability of the food supply to the schools leaving thousands of children without morning meals. To address these issues, and to explore how to increase the amount of food that can be bought from local smallholder farmers, WFP and partners are assessing the feasibility of combining local purchase with regional or international purchase of food in a better way, to take advantage of seasonal patterns and avoid unintended market effects. This is being done under WFP's new Purchase for Progress Initiative. This may include buying food for school feeding regionally or internationally during the lean season in Malawi, and using locally produced food whenever possible. The key is to better calibrate the demand of food with the supply of food in the country in order to take advantage of seasonality in the country given that the cost of local procurement is comparable to international purchases.

Discussion

Different evaluations have already established the benefits of the School Feeding programmes in terms of support to the education of girls and vulnerable children in Malawi. However, there is a gap in the evidence on seasonal attendance patterns and the potential role for School Feeding in reducing seasonal school absenteeism. In this paper we attempted to capture seasonal trends in school participation in rural areas of Malawi, in schools with and without School Feeding.

The analysis of WFP school level survey data identified small seasonality effects on school attendance, in the range of 2-5% points across the primary school grades. Comparisons of seasonal attendance gaps between schools with and without school feeding indicated that school feeding is associated with more stable attendance patterns, with differences of about 1-2% points across the school grades. The largest differences were found in the higher grades, suggesting that the extra take-home rations were providing additional incentives for children to attend school. Though small, at the school level, differences of about 1 percent in monthly attendance would, using a back of the envelope calculation, translate to over 230 pupil days of added schooling over a single month for an average school in Malawi (in this data set with enrolment of 1,158 pupils). These findings would benefit from validation from household level analysis, as working at the school level inevitably smoothes any variations within specific pupil subgroups.

The full costs of school feeding in Malawi are in the range of US\$59 per child per year for on-site meals; WFP costs are about US\$ 22 per child per year. School feeding is a relatively costly program to run in Malawi considering that the estimated per capita cost of education there is US\$ 87. It will therefore require continued support from donors until investments in education increase. At the same time the school feeding programme could seek opportunities to reduce some of the implementation costs. For example, a preliminary analysis of alternative sourcing of commodities used for school feeding indicated the opportunities of improving overall cost-efficiency by scaling-up local food procurement. These opportunities are currently being explored by the WFP purchase for progress (P4P) initiative in Malawi.

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