How do low-cost, home-grown school-feeding programmes work? Lessons learned from Malawi

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Learners at Mpata primary school eating porridge during break time, 2017

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Location: *Malawi*

What we know: School meal provision is a common mechanism to try to reduce malnutrition rates in children while improve school attendance rates.

What this article adds: In collaboration with Malawi's Ministry of Education, Science and Technology and Ministry of Agriculture, Save the Children has piloted a home-grown school-feeding programme in primary schools in southern Malawi since 2015. Currently operational in 17 schools, a community garden provides crops that are prepared by mothers/volunteers and managed by head teachers/parent committees. A small qualitative study perceived costs and benefits of the approach, as well as the feasibility, acceptability and potential sustainability of the programme. The intervention was well received; key informants/focus groups reported positive impacts on child hunger and school attendance when meals were available. However, general food insecurity and drought negatively affected garden outputs and school attendance. Operational challenges that impacted delivery included challenges securing land for gardens, delayed seeds supply, inadequate cooking/feeding equipment, inconsistent training of school committees and poor nutritional quality of school meals. Availability of maize porridge varied in practice (ranging from approximately six weeks to three months rather than all year round) and placed considerable demands on mothers to prepare. Wider learning by Save the Children is underway with other experienced partners in Malawi to examine the feasibility, acceptability and potential sustainability of this approach.

Context

Malawi has one of the highest rates of chronic malnutrition in the world, ranking 73 out of 104 countries on the Global Hunger Index, with 37 per cent of children aged six to 59 months moderately or severely stunted. The Government of Malawi has recently emphasised school meal provision as an important mechanism for both reducing malnutrition rates in children and improving school attendance rates. In particular, home-grown school-feeding programmes (HGSF), which utilise locally produced and purchased foods to link agricultural production with school meal provision, simultaneously support several of Malawi's national targets for nutrition, food security, education and child development.

School-feeding programmes are currently implemented in Malawi across all regions, with the World Food Programme (WFP) and GIZ as the most prominent actors in the HGSF approach. Growing evidence in country suggests that school-feeding programmes can reduce the prevalence of both stunting and underweight in primary school children, while im-

proving school attendance rates across all grades and reducing food insecurity. However, recent climactic shocks across Malawi, most notably drought conditions, have dramatically affected agricultural production; as a result, 6.7 million people across the country required humanitarian assistance in 2016-17. Effective methods must be identified to mitigate the effects of these shocks and build the resilience of the poorest Malawians to withstand inevitable climatic shocks in future.

The Home-Grown School Feeding programme

History

The Government of Malawi has emphasised the provision of school meals to learners, particularly via approaches that ensure local community participation in the production, delivery and preparation of school meals. In 2009, the Ministry of Education, Science and Technology (MoEST) – along with the Ministries of Health (MoH) and Agriculture (MoA) – established the Department of School Health and Nutrition (DSHN). The ministries also launched a joint National School Health and Nutrition Strategic Plan and guidelines for its implementation through to 2018.

Recently, the Government of Malawi coordinated and integrated various social support programmes through the new Malawi National Social Support Programme II (MNSSP II), which includes the school meals programme. As the custodian of School Health and Nutrition (SHN) policy, the MoEST oversees all HGSF activities, while the MoA and MoH provide technical expertise on farming and nutrition, respectively. As a member of the SHN National Technical Working Group, Save the Children (SC) has collaborated on the development of the MNSSP II; guidelines around best practices are currently under development. At the district level, SC has been collaborating with the DSHN and other departments since beginning its wider sponsorship-funded SHN programming in Zomba in 2008.

Initially introduced in 13 primary schools in Zomba District in 2013/14 and as part of an integrated SHN programme, SC's HGSF approach has now been scaled up to operate in 17 schools, benefiting approximately 8,600 children. In collaboration with the three ministries, SC aims to continue scaling up the HGSF programme within its impact area. SC and the ministries will then explore the potential of advocating for the scale-up of HGSF in schools nationwide.

Programme approach

SC works directly with school personnel responsible for management of the HGSF programme – namely the head teacher of each school and parent/teacher committees – to provide financial assistance on training, supervision and monitoring. Garden inputs are provided by the MoA; inputs typically include maize seeds to provide the staple porridge, plus either soya or pigeon pea seeds to bolster the meals' nutritional profile.

The programme centres on a community garden located on or around each school's campus. Fertile land is identified by the schools themselves and is either rented from or donated by local communities. Under the oversight of head teachers, delegated school staff and parent/teacher committees, crops are grown and harvested communally, stored until the lean season, and finally prepared as the mid-day meal for students by community volunteers. Of note, student participation in the management of school gardens varies by school; some schools utilise the gardens as a staging ground for lessons and practical sessions on agriculture and health, while others do not.

Study methodology

In collaboration with the London School of Hygiene and Tropical Medicine (LSHTM), SC undertook a small qualitative study in 2017 to explore the perceived costs and benefits of the approach, its feasibility, acceptability and potential sustainability. This sponsorship-funded study was undertaken to contribute to SC's efforts to build evidence on effective programming for children. Nine of the 17 pilot schools were selected to participate in the study through a mix of purposive and random sampling to ensure representation of all seven districts across Zomba. Study participants included male and female students, community and parent committee members engaged in the programme and head teachers. In total, nine focus group discussions and nine key informant interviews were conducted across all sample schools. Additionally, observations were made at each school to assess garden location and size, and kitchen, latrine and crop storage facilities. Interviews were also conducted with local experts in HGSF, including representatives from the government and non-governmental organisation sectors. Thematic analysis was performed to identify key themes; results have been shared and validated with partners at district and national level.

Findings

Although the primary objective of the study was an analysis of beneficiaries' perspectives on the HGSF programme, school visits included qualitative data collection through observations and direct conversations with head teachers. As summarised in Table 1, operational activities at the sample schools varied. Of the nine schools assessed, three had gardens located on campus, while five rented land from local communities and one received community land by donation. Identifying viable land for a garden is the responsibility of school staff and parent/teacher committees; however, beneficiaries cited land issues as a key challenge of the programme as new land often had to be identified each year due to community politics and land scarcity resulting from overpopulation in the region. Notably, liaising with community chiefs was identified as a critical component of the programme's sustainability in order to garner buy-in and generate community support.

Inputs from the MoA, distributed via SC, included fertiliser and maize seeds, the quantity of which was determined by school size. For instance, a school of approximately 800 students received a one-time delivery of 100kg of fertiliser and 10kg of maize seeds. Pigeon peas or soya seeds were also included in farm inputs; the type of supplemental crop varied by year, based on the Ministry's selection.

Crop outputs

Although inputs were generally quite uniform across sample schools, crop output generated by the school gardens varied widely and were hugely affected by the droughts and floods of recent years. Outputs from the 2016-17 harvest averaged 23 bags of maize per school, ranging from three to 49 bags. During the 2015-2016 season characterised by drought, outputs ranged from just one to seven bags of maize per school. Production from the supplemental seeds was minimal, with five of nine schools harvesting one to two bags of either pigeon peas or soya. As such, school meals generated by the HGSF programme consisted of maize-based porridge supplemented with peas or soya for these five schools only.

Meal provision

Insufficient garden outputs resulted in fewer meals provided than projected, cited as a critical challenge

Table 1 Summary of the HGSF programme funded by Save the Children in Southern Malawi

Theme	Sub-theme	Details
Duration	13 pilot schools	3 years in HGSF programme
	4 additional schools	1 year in HGSF programme
Location	Southern Malawi	7 zones across Zomba District
Inputs	Seeds	Provided annually by MoA during growing season
	Fertiliser	
Outputs	Meals per week	Averaged 3 times per week for 3 months during lean season Averaged 3 times per week for 3 months during lean season
	Meal content	Maize porridge only at 4 out of 9 schools Maize porridge + soya/pigeon pea supplement at 5 out of 9 schools
Beneficiaries	Student enrolment	8,012 students at time of data collection

of the HGSF programme by most beneficiaries interviewed. Although meals were provided during the lean season in an effort to lessen critical food insecurity among communities in the region, schools were able to provide meals for a maximum of four months per year and a minimum of just one week. Outside the HGSF programme, no meals were provided at any of the sample schools. Issues related to school committee organisation and management of the programme contributed to the challenge of consistent meal distribution, as did school capacity for operating the programme throughout the year. Garden management and meal preparation are performed by community volunteers, the majority of whom are women. A recent government mandate to serve all school meals prior to the first class of the day exacerbated the time burden associated with the programme as volunteers had to neglect home duties in order to arrive on campus early in the morning to prepare the porridge.

Training

To bolster school capacity and community ownership of the HGSF programme, SC aimed to provide annual training for each school on operations, garden management and meal preparation techniques. Based on self-report, some respondents had never received training, while others were trained more than once a year. However, several challenges were noted here: firstly, some recipients may have confused SC learning/observational visits with provision of training; secondly, trainings did not always target all committee members at a given school due to funding constraints; and thirdly, turnover among committee members meant replacements tended to miss the annual training. Given the high turnover of school staff and committee members in charge of the programme, more frequent trainings were cited by beneficiaries as an area for improvement. Furthermore, trainings were noted to be lacking in proper hygiene practices, modern agricultural techniques to help sustain drought conditions and porridge preparation in mass quantity.

Kitchens

By programme design, schools erected kitchens on their own; however, only four of the nine sample schools had an established kitchen area at the time of evaluation. Committee members and students contributed kitchenware items to the programme, including pots and cups. Students identified this as a key challenge as bringing cups from home was not possible for many; others experienced negative reactions from parents when cups were lost, broken or stolen.

Programme successes

Increased school attendance/reduced absenteeism

Overall, the HGSF programme was received positively by beneficiaries and other stakeholders alike. Most participants cited increased school enrolment as the primary success of the HGSF programme, noting enhanced student performance as a benefit of efforts to reduce hunger. Head teachers universally noted improved absenteeism following implementation of the programme, with attendance rates fluctuating in accordance with meal provision. Introduction of the HGSF approach generated enthusiasm among community members, primarily due to its impact on school attendance. Several members of various parent/teacher committees noted longer-term results of the programme; as one PTA leader stated, "We were very excited to hear that the school feeding programme was being introduced here. This helped us draw back the children who went into early marriages, to bring them back to school."

That said, absenteeism was seen by informants to increase in line with at-home food insecurity, thereby reducing positive impacts associated with the HGSF programme. During the 2015-16 drought, lower crop yields were experienced at both home and school gardens. Beneficiaries noted reduced attendance rates during this time as students felt too hungry to attend school or sought jobs as far reaching as Mozambique and South Africa. Evidently, the positive effect on absenteeism was conditional upon a minimum degree of food security in the beneficiary households. Nonetheless, the provision of school meals was often cited as playing a role in reducing food insecurity at home by ensuring that one meal was consumed outside the household. Limited parental contribution to the programme and reliance on food aid were also highlighted as key consequences of volatile weather patterns.

Community sensitisation

Of nine key informant interviews with head teachers, six cited community sensitisation as a method of improving knowledge of and participation in the programme. Direct engagement of village chiefs in the programme was noted as a key driver of the programme's success. These findings are supported by other studies conducted across sub-Saharan Africa by the World Food Programme (WFP), the Partnership for Child Development and others; sensitisation campaigns to support community involvement and development have supported HGSF interventions as a tool in transitioning to nationally-owned school-feeding programmes. Building community-level capacity has been recognised as critical to strengthening community ownership, which sustainably improves HGSF service provision.

Programme challenges

Study participants cited two key weaknesses of the current approach: insufficient farm inputs, namely seeds, resulting in reduced garden outputs (i.e. maize production), and poor nutritional quality of school meals. Related to this, unstable weather patterns were noted by beneficiaries and experts alike as an external threat to the programme's success. Parent and committee members felt that their inadequate knowledge base regarding more sustainable, modern agricultural practices inhibited their ability to manage and operate the programme to its full potential. Furthermore, consistent and reliable access to land on which to operate school gardens was cited as a major challenge and clear barrier to the sustainability of the programme.

On a broader scale, differing priorities of the three government ministries involved in the programme created a challenge for the coordination of HGSF implementation. The MoA is inclined to serve the general community rather than a specific focus on schools; in contrast, the MoEST's mandate is directed towards improving education outcomes over health.

Insufficient farm inputs

The untimely delivery of farm inputs in sync with the growing season was routinely cited as a barrier to community participation in the programme, further reducing the potential for expected production. Specifically, head teachers and committee members at six of nine schools experienced delays in the delivery of seeds and/or fertiliser; late delivery coincided with the onset of the rainy season, which subsequently damaged crops. SC's role in programme implementation was limited to mobilisation of schools and communities to initiate and manage the programme, with farm inputs selected and provided by the MoA. However, beneficiaries' negative experience of the quantity, diversity and timing of input delivery was attributed to SC, not to the government. This knowledge gap points to insufficient training of beneficiaries or deficiencies in programme implementation since, per design, the HGSF approach is intended

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A head teacher at Milola primary school admiries a maize crop in the school garden, 2017

to be community-owned and managed. Thus, receipt of farm inputs – primarily maize seeds in this case – is critical to the functionality and longevity of the programme.

Insufficient land

Challenges in acquiring and sustaining sufficient land for gardens was referenced by beneficiaries at all nine schools. Per programme design, gardens are intended to be located on campus; however, six of nine schools currently rent land from local communities. Barriers to successful garden management and production included theft of seedlings and crops, change in rental agreements and distance from school and community. As highlighted by a member of the MoEST, acquisition of permanent land is a key challenge: "In Zomba to be specific, there are issues to do with land for the schools. At times, they identify a piece of land this year where they can pay and rent, and the next year the owner says, 'No, I would like to do whatever I want with this land; go find another piece'."

Time burden

School staff and committees alike noted the time burden associated with managing and operating the HGSF programme. In particular, female community volunteers tasked with preparing the daily porridge were challenged by managing the time required at school with their own tasks at home. Although notably supportive of the programme, some volunteers interviewed highlighted the time associated with managing food preparation as a critical challenge. For instance, insufficient kitchen pots and utensils required volunteers to take turns preparing porridge as stocks were not enough to feed a full student population.

Poor nutritional quality of school meals

Most beneficiaries found the maize-based porridge provided to be of poor nutritional quality; many interviewed felt that improving the programme's impact would require more nutrient-rich meals. School committee members cited lack of training as a barrier to the provision of more nutritious meals: "Those who prepare the porridge ... need to be trained on how to make a hygienic and nutritious porridge."

Lessons learned

SC's HGSF approach is a low-cost model with the potential to be a sustainable method of reducing food insecurity and improving educational outcomes. While no cost analysis has been conducted to date, key financial and opportunity costs include training for SC, volunteers' time for communities, and seeds and fertiliser for government (the latter is already included in the national budget).

However, as detailed, several operational challenges were identified. Based on the findings outlined here, considerations for scale-up or future programmes include the need for more frequent trainings to educate communities on programme management and execution, provide nutrition education and enhance local-level stakeholder collaboration. Efforts to improve nutritional quality of porridge should also be considered, which should inform farm inputs selected for distribution to school gardens. In addition, the number of farm inputs should match enrolment and be delivered in time with the planting/harvest cycle. At a strategic level, successful programme implementation and scale-up require enhanced and streamlined collaboration among partners – including government ministries – from the planning stage.

Going forward, a task force comprising all partners will be established to determine next steps for the HGSF programme, including potential adaptations of the current approach to strengthen nutrition education, utilise more diverse seeds selection as farm inputs and, potentially, a narrower focus on schools with the most capacity to adopt the programme. As SC awaits feedback from the Government, concrete plans for future research are not yet underway; however, a larger quantitative study is necessary to assess the nutritional impact of the programme.

Criteria for success

As an agriculture-based, community-led programme, the HGSF approach is reliant on certain conditions to be successful. As unpacked by this study and experienced by other organisations engaged in HGSF approaches in the Malawi context – principally GIZ – these criteria include:

- School access to land for garden and ade quate water source, both for irrigation and drinking;
- Engaged head teacher, school staff and community members, including community chiefs;
- Integration into existing national strategies and social protection systems addressing hunger and malnutrition; and
- Ability to complement existing basic health interventions, including sanitation facilities and hygiene approaches.

Conclusion

These findings illustrate that SC's HGSF approach is well received by beneficiaries and can reduce absenteeism in primary schools. This low-cost, community-based approach is potentially replicable and sustainable. However, continuation and scale-up of the intervention may be inhibited by poor coordination among stakeholders, insufficient capacity of some communities to manage the programme and the impact of volatile weather patterns on crop production. SC is continuing to examine the evidence generated by this study and reaching out to partners and other experienced organisations – including WFP and GIZ – to share and learn from best practices. Addressing these challenges will be critical to the acceptability, sustainability and expansion of the HGSF programme across Zomba and elsewhere in Malawi.

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Learners receive porridge at Namalombe primary school, 2017