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Home Grown School Feeding in Low-Income Countries: Harvesting Benefits for Smallholder Farmers

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By

Anne Margrethe Brigham (Ruralis)

and

Ruth Haug (NMBU)

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Rural children outside Lilongwe in Malawi. Photo: Ruth Haug

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Anne Margrethe Brigham, Ruralis

Ruth Haug, Department of International Environment and Development Studies, Noragric

Faculty of Landscape and Society
Norwegian University of Life Sciences (NMBU)
P.O. Box 5003
N-1432 Aas Norway

<https://www.nmbu.no/en/faculty/landsam/department/noragric>

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Home-Grown School Feeding in Low-Income Countries: Harvesting Benefits for Smallholder Farmers

1. *Introduction*

Against the backdrop of widespread poverty and food insecurity and poverty in Low and Middle-Income Countries (LMICs) and that most of the population in these countries relies on agriculture for a living, the concept of Home-Grown School Feeding (HGSF) grew out of three interconnected realizations. The first was that isolated, sector specific, interventions often fail to realize the intended goals because a more wholistic approach is needed. The second was that agricultural interventions intended to improve incomes and food and nutrition security (FNS) of smallholder in LMICs often fell short of their aspirations because farmers that were helped to increase productivity and produce a marketable surplus, lacked a market on which to sell this (AU and AUDA-NEPAD 2022: 19). Lastly, school feeding (SF)—an intervention generally successful in improving nutrition, health, and educational outcomes for children—was at best an untapped market for local smallholder farmers, but at worst undermined local agricultural development because the programs often relied heavily on imported or donated food from abroad that displaced local production (GCNF 2019: 36; WFP 2013; Gelli et al. 2010: 3; Bundy et al. 2009). The promise of HGSF is to reduce poverty and food insecurity by buying school food locally, thereby providing a new and stable market for smallholder farmers.

HGSF is a wholistic and cross-sectoral approach that has potential benefits across the sectors of education, health, social protection, and agriculture. It can provide direct benefits for education through increased attendance, especially of girls, and indirect benefits for education through improvements in health that in turn benefit cognition and learning (Bundy et al. 2018: xxi). The programs can also improve health directly through better diet quality and quantity, and provide investments in local economies, first, as a safety net (with a transfer value of about 10% to 15% of income), and second, through the local purchase of food which stimulates agricultural production (*ibid*).

HGSF started to take root as a policy to reduce poverty and improve FSN in LMICs around the turn of the 21st century (FAO and WFP 2018: 5; Bundy et al. 2018). For instance, in 2003, the New Partnership for African Development (NEPAD) Secretariat under the Comprehensive Africa Agriculture Development Program (CAADP) endorsed HGSF as one of the strategic programs of AUDA-NEPAD (AU and AUDA-NEPAD 2022: 5) and in 2005 the World Summit Outcome document promoted HGSF as one of four “quick-impact initiatives” and recommended that local school meal programs, using home-grown foods where possible, should be implemented to achieve the Millennium Development Goals (Cruz 2020: 36). At the UN Food Systems Summit in 2021, a “Global School Meals Coalition” was formed and joined by 55 development organizations and 61 countries,

including Norway (WFP 2021: 1). In addition to encouraging the spread of school meals to the most vulnerable children across the globe, one of the main objectives of the School Meals Coalition is “promoting safe, nutritious and sustainably produced food, and provide balanced diets linked to local and seasonal production, where appropriate” (AC and AUDANEPAD 2022: 15).

This report studies the potential and realized benefits of HGSF in LICs. We focus on the extent to which these programs contribute to strengthening smallholder farmers' food security and nutrition as well as incomes. Furthermore, we shed light on the cost of HGSF and how these programs can become financially sustainable if, or when, external financial support diminishes. We do this by a desk review of literature on HGSF in LMICs and by interviewing key informants in the major international organizations, bilateral organizations and NGOs within School Feeding (SF) in these countries. In addition, we take a closer look at the HGSF programs in two of Norway's partner countries for long term development: Malawi and Ghana. These two countries, with SF programs that share some important characteristics but differ in others, are used to shed light on the successes and challenges in molding context-specific programs and bringing them up to scale.

2. Defining Characteristics of HGSF

While there are many variations in the meaning of the HGSF concept, we use the definition agreed to by development partners such as the FAO, the WFP and IFAD:

“HGSF constitutes a school feeding model that is designed to provide children in schools with safe, diverse and nutritious food, sourced locally from smallholders”
(FAO and WFP 2018: 6).

In HGSF programs, the definition of “local” varies from the area directly surrounding the schools, to the wider local area, larger regions, and to the whole country. Thus, how a HGSF program defines local determines where, geographically, the food is sourced from. To improve livelihoods of smallholders through HGSF, the guiding principle is generally the more local the better, except in areas with protracted conflicts, or very arid and low-producing areas where increased demand for locally produced food can create food shortages, price increases and other market disruptions (WFP 2019A: 29 and WFP 2021: 35). As many as 82 percent of the 84 countries in a global survey of School Feeding Programs (SFPs) procured some food domestically, and 76 percent procured from local sources defined as the district, county, municipality/town, or community (GCNF 2019: 36-37). These statistics do not, however, say anything about how much and from what type of farmers. Only 28 % of all programs purchased food from foreign sources. About 50 percent of programs in LMICs receive in-kind donations, both from within the country and—for about 35 percent—from other countries

(ibid). At the same time, challenges in securing a stable supply of locally-produced food due to adverse climatic conditions or generally low productivity were raised by many of the LMICs including Kenya, Mauretania, Guatemala, Liberia, and Malawi and even by Brazil—the HGSF success story (ibid: 37). Even if the SFP only purchased a percentage of food locally, it can be considered home-grown in so far as it fosters local agricultural markets and (smallholder) producers (FAO and WFP 2018: 8).

What constitutes a smallholder also varies considerably between countries, and even within them (FAO and WFP 2018: 53). How they are defined has implications for who can potentially benefit from the program and the need for adapting policies and interventions to facilitate their participation (ibid: 53 and 58). One of the first steps in planning an HGSF program is, therefore, to clearly define and operationalize the target group, i.e., what characterizes the smallholder the program wants to include in terms of for example the size of cultivated area, income level and/or family farming (farms managed and mostly worked on by the household) (ibid: 53-54). The FAO and WFP (ibid: 54) also recommend that considerations be made for whether the program should include mostly women farmers and/or smallholders that already produce a marketable surplus of the relevant food types—and incrementally involve other famers as they receive agricultural extensions that enable them to produce a surplus. In Brazil, which has the most well-known and perhaps most successful HGSF program in the world, a law requires that a minimum of 30 percent of the food for the national SFP must be purchased from smallholders (ibid: 57).

HGSF is a food systems-oriented approach that aims to provide development opportunities for vulnerable people along the school food value chain. A school food value chain comprises all the activities and inputs from food production, via wholesale and trading, transport and storage, processing, distribution to schools, food preparation, all the way to the consumption of the food by schoolchildren and has many potential entry points for development interventions that can provide improved income and FSN opportunities for local farmers, traders, transporters, processors, and cooks.

3. Benefits for Smallholder Farmers

It is well documented that School Feeding Programs (SFPs) in LICs, whether home-grown or not, have been effective in getting children—and especially girls—into school and in keeping them there, and the programs contribute to their learning by improving cognitive abilities, nutritional status, and general health (FAO and WFP 2018: 9-18; AU 2018: iv; Gelli et al. 2010; Jomaa et al. 2011; Bundy et al. 2009). HGSF programs in *middle-income countries* (MICs) have also proven their worth for the agricultural sector (WFP 2020B: 6), but in LICs the empirical evidence paints a much more complex picture. One reason for this is that there are very few studies on the impacts of HGSF on the agricultural sector in these countries (Gelli et al. 2021: 1; GCNF 2019: 85; AU and AUDA-NEPAD 2022:

16; AU 2018: iv). Another reason is that the few studies that have been conducted, report mixed results.

Some evaluations of school feeding programs in LMICs have, nevertheless, been conducted. For instance, an evaluation of the HGSF program in Cambodia (Bliss 2017: 27) concludes that the benefits for farmers are generally modest (about 50 USD per month in cash income), and that there has been an additional spillover effect in that agricultural producers have begun diversifying production to formerly scarcely produced and little-known nutritious vegetables, making these available both on the markets and for on-farm consumption (*Ibid*). In Burundi, a qualitative analysis found that market-dominating cooperatives accustomed to accumulating major volumes were the only ones able to respond effectively to the demand from the HGSF program, but since these cooperatives are supported by a high number of individual producers, they were able to generate some revenue improvements for a range of farmers (WFP 2019B: 1-2). An evaluation of the HGSF program in Lao found that lack of coordination and planning among farmer groups of different villages led to the production of similar types of vegetables in large quantities, which resulted in an oversupply and reduction in prices and that only one-third (five of 15) of the farmer groups involved in the HGSF program reported an increase in income over the past two years (NRMC 2020: 37). Farmers did, however, continue to grow vegetables to support school meals and self-consumption, indicating a change towards more nutritious foods, and most of the villages (10 out of 15 intervention villages) reported a change in the overall quality of lives of community members as a result of improved farming methods and the change in their attitude towards nutrition (*ibid*: 33). The HGSF program in Rwanda has been implemented for less than two years and an evaluation finds “signs that it has positively affected farmer income” (WFP Rwanda 2020: 59).

However, a perhaps more rigorous, cluster-randomized controlled trial that studies of the effect of HGSF on smallholder incomes in the GSF program in Ghana, concluded that “agricultural objectives remain aspirational” (Gelli et al. 2021: 3). In addition, a controlled trial study of the agricultural impacts of the HGSF scale-up program in Zambia from 2017-2018 compared the impact on groups of smallholder farmers that received demand side support alone, agricultural production support alone, and a group that received a combined intervention of both demand and the supply side supports (Prifti and Grinspan 2021). The study showed that the intervention that only focused on improving market access had mixed, but mainly negative, effects on smallholder incomes and FSN (*ibid*: 94). However, for smallholders that benefited from both the increased demand from the HGSF program *and* interventions to increase production, the negative effect turned positive (*ibid*). The study concluded that increased demand from HGSF programs needs to be accompanied by supply-increasing interventions (*ibid*). Furthermore, an analysis by the African Union of the effects of HGSF programs on agricultural development outcomes in 20 African countries (AU 2018: IV) concluded that

the impact of SFPs on agricultural and local economic development is limited, mostly because there was a lack of large-scale structured demand programs and supply-side responses to support the expansion of HGSF and local production capacities (*ibid*).

Women comprise 50 percent of the agricultural labor force in Eastern Asia and Sub-Saharan Africa but face a serious gender gap in productivity due to unequal access to productive resources (FAO 2011: 5). HGSF interventions that aim to improve both productivity and access to markets for women, can be especially effective in improving household FSN, because when women control additional income, they spend more of it than men do on food, health, and education for their children (*ibid*). It is, however, important that the interventions are crafted with a gendered approach, as the introduction of cash crops and new farming technologies often reduce women's power over incomes and thereby the amount of income and food spent on feeding the family. In Haiti, for instance, women in smallholder households have traditionally been responsible for virtually everything to do with food, from the harvest to the cooking and portioning of the meals, and this has assured rural Haitian women economic opportunities and a relatively high level of gender equity (Socio-Dig 2018: 22-26). Haitian women are therefore significantly more competent than men at harvesting, aggregating, transporting, storing, processing, and cooking foods (*ibid*: 28). The HGSF program in Haiti has, nevertheless, given men the opportunity to bypass their wives and sell produce on their own, effectively putting men into the roles of women and mothers, challenging female dominion, cutting into female income and risking the siphoning off family income to male activities rather than it being used for food, schooling, etc. for the children (Socio-Dig 2018: 22-25).

HGSF programs can also contribute to women's economic empowerment through jobs in food preparation as at least 75% of school cooks in SFPs worldwide are women (GCNF 2019A: 60). There is, however, a need to emphasize formal employment and fair wages, as around 70 percent of all cooks in SFPs in LMICS do not receive any payment for their work (*ibid*). Thus, instead of providing economic opportunities for these women cooks, the SFPs adds to their already very heavy burden of (unpaid) work. While the *potential* benefits of HGSF on agricultural and wider community development are widely understood and accepted, this section has showed that there is still a way to go to ensure these benefits are secured on a larger scale.

4. *HGSF Policies to Improve Benefits for Smallholder Farmers*

For smallholder farmers, the school food value chain presents two main pathways to improve incomes and FNS. The first is through expanded access to the SF market. The second is agricultural interventions to help smallholder farmers produce the types of food the schools are serving effectively and profitably.

Increasing market access follows a demand side logic where increased demand for locally produced foods is expected to spur production and productivity increases for local smallholders, leading to surplus production that they can profitably sell on the SF market. There are three main avenues for a HGSF program to improve market access for smallholder farmers. The first is the degree of centralization/decentralization of the management and procurement of food, the second is laws and regulations governing public procurement, and the third is the types of food included in the school food menus.

Government owned HGSF programs can be planned, managed, and implemented by national, regional, and/or local level authorities. The degree of centralization versus decentralization—especially of procurement—in the HGSF program influences smallholders' ability to participate, as centralized models often use bulk purchasing to take advantage of economies of scale that local smallholders generally cannot generate (AU and AUDA-NEPAD 2022: 35-37; FAO and WFP 2018: 61). In decentralized models it can be easier for local smallholders to participate because menus can be tailored to the quantities and types of food produced locally. Thus, centralized models can be more cost efficient and conducive to standardization of procedures and monitoring and control, while decentralized models often facilitate a varied supply of fresh foods and smallholder engagement with spill-over to the local community in terms of participation in the other links of the school food value chain (FAO and WFP 2018: 59-61; AU and AUDA-NEPAD 2022: 40-41).

Procurement policies are important for smallholders' market access because food purchases in government owned HGSF programs are normally governed by public procurement rules that aim to ensure open competition, efficient use of public resources, and transparent allocation decisions (FAO and WFP 2018: 56-57). Smallholders in LICs are, in general terms, ill-equipped to access markets that are regulated by such laws and regulations because they often inhabit complex procedures and require quantities, food types, and prices that only work for large producers (AU and AUDA-NEPAD 2022: 35-36). There are, however, possibilities for adapting public procurement regulations so that they give preferential treatment to smallholders. To include smallholders in HGSF value chains, procurement policies may need to be adapted with regulations that aim to balance the need for efficiency, transparency and competition with practices that make it possible for smallholders to sell to SFPs (AU and AUDA-NEPAD 2022: 41). The Model Law on Public Procurement by the United Nations Commission on International Trade Law (UNCITRAL), for instance, recognizes the quest for social and economic goals such as the support of smallholder producers as one of the objectives of public procurement systems and accommodates for the pursuit of such objectives through preferencing and reservation schemes (Cruz 2020: 36).

Another important factor that influences the ability of smallholders to sell to SFPs is the degree to which the school menus include the types of food they can produce (AU and AUDA-NEPAD

2022: 35-37.) When determining the school food menu, it is therefore important to have an explicit focus on how nutritional needs can be met by locally produced food. However, SFP planners in LICs often lack both an understanding of the importance of nutrition for health and education, and the ability to plan nutrition-sensitive meals sourced from local smallholders (AU and AUDA-NEPAD 2022: 19 and PAA 2016). In other cases, there is a trade-off between the timely and stable provision of food and how locally the food can be sourced, depending on the availability of nutritionally adequate food of the right quality and quantity and logistical aspects such as the quality of roads and timeliness of payment to producers (AU and AUDA-NEPAD 2022; FAO and WFP 2018; WFP 2019A: 29). The School Meal Planner (SMP) is a software tool that can help local procurers navigate these waters (Drake et al. 2013) but requires user-training and input of the types of food it is possible to produce at the given local level.

Smallholder farmers across LICs in general, and Sub-Saharan Africa in particular, are often locked into a downward spiral of declining productivity and spreading poverty because they face challenges such as lack of access to credit, technology, inputs, and know-how (AU and AUDA-NEPAD 2022: 19; Gelli et al. 2021: 8; PAA 2016). Agricultural extension, subsidies, improved access to credit and inputs are imperative to equip smallholders to take advantage of the new and stable market that the SFPs represent (Gelli et al. 2021: 18;). The second main entry point for improving smallholder incomes and FSN in the school food value chain is, therefore, supply-side interventions aimed at increasing smallholder productivity and helping them transition to producing new types of food.

While policies to improve local smallholders' access to market are most often included as an integral part of HGSF programs, agricultural support interventions are not. Despite a general awareness of the need for supply-side interventions for farmers to be able to take advantage of the structured demand from SFPs, these are often seen as parallel interventions and not integrated into the HGSF program and budget. This is reflected in that only 43 percent of the 84 countries in the GCNF survey of "School Meal Programs Around the World" involved farmers, and very few countries reported that their ministries of agriculture have responsibilities for key function in the SFPs, even though many of the countries in the survey reported that local farmers were not able to produce adequate amounts of food (GCNF 2019: 84; Gelli et al. 2021: 1).

A gendered approach that integrates both demand side and supply side adaptions and interventions to the school food supply chain is imperative for realizing the many potential benefits presented by HGSF. To achieve this, it is necessary to integrate the work of procurement and agricultural departments of the most important International Organizations (IOs) in HGSF. Extensive cooperation and coordination between the ministries and local authorities within education, health, and agriculture is also essential. One of the key takeaways from a review of best practices across the African continent is that for this to work, it is essential that a designated HGSF coordinating

committee be set up and mandated to provide oversight for the school feeding program (AU and AUDA -NEPAD 2022: 55).

Table 1 shows indicators for the focus on local farmers and women in the SF programs in Norway's partner countries for long term development and for stabilization and conflict prevention. We can see that seven of the twelve countries include fresh vegetables, fruits and/or animal products in the school menu. All but one of the countries purchase at least some of the food domestically, and only Uganda and Niger report that they purchase food for schools abroad. The majority of the countries also receive some in-kind food donations from foreign countries, while Myanmar is the only country who relies on this source entirely. Five countries receive in-kind food from domestic sources. (Such donations are often in the form of parent contributions and seen as part of community involvement that is good for local ownership and program sustainability). We can furthermore see that farmers are involved in the programs in nine of the countries, but that only five countries have agricultural goals integrated into the SF program and the same number of countries offer agricultural education to the students as an extension to the SF program. All countries report that they have a specific focus on creating jobs for women along the school food value chain.

Table 1: Focus on Farmers and Women in SF Programs in Norway's Main Partner Countries

Partner country	Modality	Vegetables, fruits, and or animal prod.	Purchase domestic	Purchase foreign	In-kind domestic	In-kind foreign	Agric. dev. goals	Farmer involvement	Complimentary agriculture education	Female jobs focus
<i>Long Term Development Partners</i>										
Ethiopia	B, T-HR	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes
Ghana	L	Yes	Yes	No	No	No	Yes	Yes	No	Yes
Malawi	B, L, T-HR	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Mozambique	CCT	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Uganda	B, L	No	Yes	Yes	No	Yes	No	Yes	No	Yes
Myanmar	S, T-HR	No	No	No	Yes	Yes	No	No	No	No
Indonesia	In-school meals	Yes	Yes	No	No	No	No	Yes	No	Yes
Nepal	L, T-HR	Yes	Yes	No	No	Yes	No	No	Yes	Yes
Colombia	L	Yes	Yes	No	No	No	No	Yes	No	Yes
<i>Partner Countries for Stabilization and Conflict Prevention</i>										
Mali	L, S, T-HR, CCT	Yes	Yes	No	Yes	Yes	No	No	No	Yes
Niger	B, L, D, T-HR, CCT	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
South Sudan	L, T-HR	No	Yes	No	No	Yes	No	Yes	No	Yes

Notes: Source: GCNF 2022. Data are self-reported by the countries in online surveys from 2019 and 2021. Data not available for Sudan, Tanzania, Afghanistan, and Palestine. B= breakfast, L= lunch, D= dinner, S= snack, T-HR= Take-Home Rations, CCT=Conditional Cash Transfer. Complimentary agriculture education refers to programs for schoolchildren receiving school food.

5. Costs, Cost-benefit, and Economic Sustainability

The cost of school feeding includes food procurement, transportation, storage, monitoring of implementation (Drake et al. 2017) as well as food preparation and the general planning and management of the program. In Sub-Saharan Africa, an average of about 65 percent of the budget for school feeding goes to pay for food, 10 percent goes to fixed, one-time costs and 12 percent goes to storage, handling, and transportation and “other costs”, respectively (*ibid*). In Southeast Asia, around 77 percent goes to food, 10 percent goes to storage handling and transportation and other costs, and about 5 percent to fixed, one-time costs (*ibid*). Modality and meal size are key determinants of school feeding costs, as reflected in an average cost per child per year for school meals, biscuits, and take-home rations cost of 27 USD, 11 USD, and 43 USD, respectively (*ibid*). The cost also varies across countries, regions, and income levels. In 2020, the median cost of school meals (of all modalities) per person per year was 55 USD in LICs and 41 USD in MICs (WFP 2019A: 106). School feeding costs as a proportion of total costs for education is highest in LICs and in 2020 they accounted for 77 percent (*ibid*).

There are, to our knowledge, no studies that compare the costs or the cost-benefit ratios of SFPs without the home-grown component with HGSF programs, or between HGSF programs where support to smallholder production is integrated, and programs where this is not the case. A comprehensive study (by Verguet et al. 2020) of the cost-benefit ratio of HGSF shows that this is an intervention that gives relatively high returns compared to other types of development interventions because of its multiple impact across the four sectors of education, health, social protection, and agricultural development. This study analyzed the costs and benefit associated with HGSF in 14 countries across Africa, Asia and Latin America (Botswana, Brazil, Cape Verde, Chile, Côte d’Ivoire, Ecuador, Ghana, India, Kenya, Mali, Mexico, Namibia, Nigeria and South Africa) and revealed cost-benefit ratios ranging from 7-35¹ (*ibid* 2020: 1 and 6). This range of cost-benefit ratios puts HGSF on par with many of the “best buy” intersectoral interventions identified by the Copenhagen Consensus Exercise (*ibid*: 6). However, these ratios are based on *estimates of potential benefits* and not empirical findings of impacts on the ground (*ibid*). More research is needed to measure these cost-benefits in real life settings (WFP 2019A: 121). This is especially important for the benefits for the agricultural sector, where very few empirical studies have been conducted.

It is important that national governments prepare to take over both the financial and the implementation responsibilities of their SFPs when support from external donors declines or disappear completely. The State of School Feeding report (WFP 2019A: 171) reveals that there has been a substantial movement towards domestic financing of SFPs. Programs in high- and middle-

¹ This means that they should yield from 7-35 USD per USD invested (as for any other currency, of course).

income countries are almost exclusively financed by internal funds, while programs in LICs external sources of funding cover about 83 percent of the current programs (WFP 2019A; AU 2018: IV). In 2019, the share of government funding was 60% in the Middle East & North Africa; 72% in North America, Europe & Central Asia; 89% in the South Asia, East Asia & Pacific region; and 99% in the Latin America & Caribbean (GCNF 2019A: 40). Across countries in Sub-Saharan Africa, the average share contributed by government was 42% (WFP 2019A). Even if this is quite low compared to the other regions of the world, there is progress towards more government funding also in Sub-Saharan Africa. In the West Africa region, domestic funding to SF almost doubled between 2013 and 2020, in East Africa there has been a quadrupling of national support to SF between 2013 and 2020, and in Southern and Northern Africa, most programs are supported by national funds (AU and AUDA-NEPAD 2022: 5). In Kenya, the national school feeding program, covering 11 percent of primary and secondary school age children and where all food is purchased domestically, the government contributes with 100 percent of the financing of the (GCNF 2022). On the lower end of the spectrum, Cameroon, the Republic of Congo, Liberia, Malawi, Mozambique, South Sudan, Syria, and Yemen, have a 1% or less share of government funding of SFPs (*ibid*).

An important mechanism to increase government funding to SFPs is that costs are borne by the national budget rather than the education sector budget alone (WFP 2019A: 28) and to have a separate budget line for the costs in the national budget (GCNF 2019: 36). A 2019 study found a strong correlation between school feeding coverage rates (in terms of share of school age children that receive some food at school) and having school feeding as a national budget line item (*ibid*). For countries with no line item, an average of 15% of primary and secondary school-age children received food through their schools, while among the countries that did have a line item, this value was 26% (*ibid*). Other studies have shown that the inclusion of the agricultural sector is critical for enabling the transition to sustainable, scalable government-run programs (Bundy et al. 2009; Drake et al. 2016), and that there is extensive cross sectoral cooperation between national and local authorities in education, health, social protection, and agriculture (AU and AUDA-NEPAD 2022: 55). A solid anchoring of the HGSF program in national and local laws and regulations is also important for their economic sustainability (*ibid*). Last, but not least, relevance to context and community ownership in the form of in-kind or labor contributions and/or involvement in planning and implementation are important factors for a sustainable transition to national ownership (*ibid*).

Table 2: Costs and Sustainability in SF Programs in Norway's Main Partner Countries

Partner country	Country income level	School level for SF	% School-aged children covered	Cost per child per year	% Government funding	% International funding	Separate budget line for SF	National SF policy	Ministries involved	Community engagement
<i>Partner Countries for Long Term Development</i>										
Ethiopia	Low	Pre, primary	6 %	35 USD	58 %	42 %	No	Yes	Edu.	Yes
Ghana	Lower Middle	Pre, primary	28 %	41 USD	100 %	0 %	Yes	Yes	Gender, Child and Soc. Prot..	Yes
Malawi	Low	Pre and primary	43 %	5 USD	1 %	99 %	Yes	Yes	Edu.	Yes
Mozambique	Low	Primary, secondary	1 %	59 USD	0 %	100 %	No	Yes	Edu.	Yes
Uganda	Low	Pre, primary, Secondary	23 %	25 USD	4 %	87 %	No	Yes	Edu.	Yes
Myanmar	Lower Middle	Pre and primary	4 %	48 USD	NR	NR	NR	No	Health and Edu.	Yes
Indonesia	Lower Middle	Primary, secondary	2 %	162 USD	100 %	0 %	Yes	Yes	Edu.	Yes
Nepal	Low	Pre, primary	26 %	38 USD	87 %	13 %	Yes	Yes	Edu.	Yes
Colombia	Upper Middle	Pre, primary, secondary	48 %	181 USD	70 %	30 %	Yes	No	Edu.	Yes
<i>Partner Countries for Stabilization and Conflict Prevention</i>										
Mali	Low	Primary, secondary	6 %	55 USD	19 %	75 %	Yes	No	Edu.	Yes
Niger	Low	Primary, secondary	3 %	87 USD	14 %	85 %	Yes	Yes	Edu.	Yes
South Sudan	Low	Pre, primary, secondary	13 %	129 USD	0 %	100 %	No	Yes	Edu.	Yes

Notes: Sources: Country income level and Cost per child per year is WFP 2020C, Cost per child per year is in constant USD. All other data are from GCNF 2022, where data are self-reported by the countries in online surveys from 2019 and 2021. Data not available for Sudan, Tanzania, Afghanistan, and Palestine.

Table 2 gives an overview of indicators for coverage, costs, and sustainability for SF programs across Norway's main partner countries. We can see that the percent of all school-aged children that receive some form of school feeding varies considerably between these countries, with Mozambique, Indonesia, and Niger on the lower end (with 1, 2, and 3 percent coverage, respectively) and Colombia (48 percent) and Malawi (43 percent) on the other. The cost per child per year also varies considerably, from 181 USD in Colombia, 162 USD in Indonesia and 129 USD in South Sudan to 5 USD in Malawi². The share of government funding ranges on the spectrum from 100% in Ghana, and Indonesia and 87 percent in Nepal, to 1 percent in Malawi, and 0 percent in Mozambique and South Sudan. Only four of the countries (including the two countries where SF is 100 percent financed from abroad) lack a separate budget line for SF in the national budget, all but three have a national SF policy, and all programs except for the one in Ghana reports the Ministry of Education as the sole, lead agency. Finally, all countries report that there is some form of community engagement in the programs. This is seen as important for sustainability if/when foreign funding disappears.

When we consider the mounting number of countries interested in setting up or scaling up programs and the growing need to designate time and effort to coordinate and exchange knowledge between the HGSF (procurement) and the agricultural development departments within these organizations and between the IOs and the national and local governments, it is important to point out that our interviews with key informants from the major IOs involved with implementation of HGSF in LMICs revealed a need to invest in the human capacity within these organizations.

6. Channels for Financing and Implementing HGSF

There is limited documentation on comparison of different financing and implementing channels regarding results of HGSF project on various categories of farmers' production, income, food security and nutrition. Possible financing and implementing channels are indicated in the below overview. Funding of HGSF projects may involve a combination of implementing actors in different kinds of collaborative partnership.

- *Funds* e.g., joint education funds where HGSF either is main activity or integrated with other activities, and where multilaterals, bilateral donors and other actors collaborate
- *Multilaterals* e.g., WFP, FAO, UNICEF, UNFPA receive support to implement HGSF projects usually in collaboration with national Governments through Ministry of Education and other ministries
- *Regional* e.g., through AUDA-NEPAD implemented in collaboration with national Governments
- *Bilateral* state to state collaboration – bilateral donors fund HGSF implemented by Governments in LICs (or implemented by the donor establishing a separate project set-up).

² The cost of 5 USD per child per year is self-reported by the Government of Malawi. Key informants have this cost at between 18 and 25 USD (see Box 1 page 21). Discrepancies can result from different programs, years, and calculation methods.

- *Governments* in LICs fund HGSF themselves (through a separate budget line in the national budget)
- *Local Governments* receive direct funding to implement HGSF in their district, might then source funding as grants to schools or to local communities (see below)
- *Local schools* receive funding to implement HGSF or *local communities* receive funds to implement HGSF
- *International NGOs* directly or in collaboration with national/local NGOs/volunteers fund/implement HGSF
- *National NGOs* or volunteers fund/implement HGSF (could include farmer organizations, farmer groups, parents groups, women groups, individual donation).

What kind of financing and implementing channels to choose will vary with the situations in each LIC as well as what kind of priority to be given to factors such as contribution to national policy development and guidelines e.g. regarding procurement, institutional capacity development, state and local administration ownership, sustainability, costs, impact and quick results, risks e.g. in relation to possible misuse of funds or food. There are numerous well-qualified actors ready to implement HGSF projects. In section 7, we will be more specific about funding modalities in the context of Ghana and Malawi.

7. School Feeding in Ghana and Malawi

Malawi and Ghana are selected as country cases, Ghana because it is 100 percent financed and implemented by the Government of Ghana (GCNF 2022), is seen as one of the, most successful HGSF program in Africa (AU and AUD-AEPAD 2022: 5), and because rigorous, peer reviewed studies on impacts on smallholder income and FSN has been conducted on the Ghana HGSF program (Gelli et al.2021; Singh and Fernandes 2018). Malawi was selected because of several on-going HGSF projects where some are partly funded by Norway as well as a challenging situation regarding food insecurity and nutrition in the country.

7.1. Ghana

Ghana is classified as a LMIC (WFP 2020C) and has a total population of about 31 million of which 13 percent live on less than 2 USD a day and 23 percent live below the national poverty line (WB 2022). Despite big strides in the reduction of food insecurity over the past three decades (Drake et al. 2016: 219), the prevalence of stunting in children under five years of age is 17, 5 percent (WB 2022).

School feeding has a long tradition in Ghana, as the first programs started back in 1958, when Catholic Relief Services (CRS) provided take-home rations for students in Catholic primary and middle schools (Drake et al. 2016: 220; Fisher 2007: 9). Two years later, the WFP began its 40-year long presence in school feeding in the country (*ibid*). Traditionally, the SFPs in Ghana had nutritional and educational goals, but did not focus on local agricultural development, and both CRS and WFP used

imported foods for their programs (Fisher 2007: 10). Motivated by the NEPAD and the millennium Development Task Force on Hunger in the (CAADP) endorsement of HGSF as a promising development strategy, the Government of Ghana initiated the Ghana School Feeding program (GSFP) in 2005 (*ibid*: 10-11). In addition to the focus on nutrition and education in the existing programs, The GSFP included objectives to reduce poverty in rural areas through agricultural development and ensuring access to markets for local farmers (*ibid*: 13; Drake et al. 2016: 224; Gelli et al. 2021: 4). The program started with 10 pilots across equally many regions, was rapidly expanded, and by 2007 as many as 975 schools and 405 000 children were enrolled (Fisher 2007: 11; Drake et al. 2016: 220). In 2021, The GSFP reached 2,5 million primary school and 930 000 pre-school students out of the 6,5 million students enrolled in these school levels (GCNF: 2022). With about 8,9 million school aged children in the country, this constitutes a 28 percent coverage rate (*ibid*).

From the beginning, the official targeting policy was to reach schools in the most deprived areas based on criteria of high poverty rates, low school enrolment, high dropout rates, low literacy, poor access to potable water, as well as communities' willingness to provide infrastructure and contribute cash and in-kind, and commitment from District Governments (Fisher 2007: 13). As the program was expanded, the targeting became more politicized and in 2012 a World Bank study found that only 21 percent of the investment by the GFSP went to the poor, and that the more affluent regions of the country received the largest share (Drake et al. 2016: 225). In response to these findings, a large-scale retargeting took place, and it is now in line with the original intentions and policies (*ibid*).

All students in the targeted schools receive a free, hot meal at lunch that should include approximately 760 kilocalories for primary school students and 530 kilocalories for pre-school students (30 percent of recommended dietary allowance per day for this age group) (Drake et al. 2016: 227). Many schools in the GSFP use a School Meal Planner software to plan menus that can be sourced locally, and the meals most commonly include a selection of maize or rice, tubers, legumes (including nuts and seeds), dark, vegetables, eggs, fish and/or meat, and a seldom time fruits (Drake et al. 2016: 225-7; Singh and Fernandes 2018: 113).

The Dutch Government provided matched funding for the first seven years of the GSFP (with some interruptions due to mismanagement of funds on the Ghanaian side) (Drake et al. 2016: 233). Today, the Government of Ghana provides 100 percent of the funds (GCNF 2022). The funds are allocated in the national budget and disbursed through the Ministry of Finance and Economic Planning to the districts—in line with the decentralized system of governance in Ghana (Drake et al. 2016: 234). The Ministry of Gender, Children and Social Protection is the lead ministry for the program (GCNF 2022; Gelli et al. 2021: 4) and it is coordinated by the (national) GSFP Secretariat that has delegated implementation authority to School Implementation Committees (SICs) made up of

representatives from the school district, parents, a traditional ruler, and someone from the local government assembly (Drake et al. 2016: 232-7). In practice, community participation falls way short of the intentions, as only about ten percent of schools have established SICs and the implementation is managed by the headteacher instead (*ibid*: 236-7). Private sector caterers are responsible for buying the food, preferably directly from smallholders, and for preparing and serving the food to the school children (Gelli et al. 2021: 4). These caterers are reimbursed for their purchases in retrospect, based on the number of children they have served, which means that food often must be bought on credit from wholesalers and not from smallholder farmers—as they most often need to be paid immediately (*ibid*: 5).

The GSFP has had substantive positive effects on learning, cognition, and nutritional status, especially for the more vulnerable children and those from the Northern regions of the country (*ibid* 2021: 20). The effects on smallholder farmer's income and nutrition are not so evident and claims of positive impacts have mostly been theoretical or anecdotal (Drake et al. 2016: 237). Two recent rigorous studies have, however, contributed to fill the gap for empirical evidence on how the GSFP influences smallholder farmer income and FSN. The first is a study that found that the composition of the school menus in terms of the inclusion of nutritionally beneficial food items not normally produced in the school district, spurred a supply response by smallholders (Singh and Fernandes 2018). Based on a survey of about 1000 households that included 621 farming households across 24 districts, it found that although the overall market demand from the GSFP is rather insignificant in relation to the total food production in the country, more smallholder farmers would both produce and consume the more nutritious foods in accordance with the inclusion of these foods in the school menu (*ibid*: 117). The study also highlighted that for these supply responses to take place, it is important to include both market access and input support services to farmers (*ibid*: 116). Since smallholders are generally highly risk adverse, the structured demand from the SF program must, furthermore, be demonstrated over time before a supply response sets in (*ibid*: 116-7).

Based on initial evidence that caterers were mainly buying food from aggregators and wholesalers, leaving smallholders' access to the GSFP market short of goals and expectations (Gelli et al. 2016), the second of these studies is a cluster-randomized controlled trial of the GSFP that was designed to assess whether caterers in the school feeding program could be encouraged to buy food directly from local smallholders, and if this would result in better market access and incomes for these farmers (Gelli et al. 2021). The intervention in the study was focused on improved routines and regulations for caterer food sourcing, enhanced information to smallholder farmers about the school food market and how to access it, as well as encouraging trust and facilitating contractual agreements between caterers and smallholders (*ibid*: 5). At the endline of the study, it was estimated that although smallholders supply to the GSFP had increased, only about 10 percent of the food was

purchased directly for smallholders (*ibid*: 19). It was also found likely that the sales from smallholders were substitutes for other sales, rather than supplemental (*ibid*: 19). In addition to lowering hopes that the demand from the school food market would improve smallholder incomes significantly, this also speaks to the risk that the institutional demand from SFPs can disrupt the regular market and lead to food shortages and/or price hikes unless measures are taken to increase local production levels. The study concludes that “We find no strong evidence that (the) school feeding program or HGSF affected smallholder market structure, farm, non-farm and household income” (*ibid*: 3). One of the reasons given for why the pilot did not have positive effects on smallholders is that the disbursements of funds from the government to the caterers (that were in charge of buying food from smallholders) were chronically delayed, resulting in late payments to farmers and a reduction in the amounts of food purchased for the SFP by as much as 50% (Gelli et al. 2021: 14, 19). The study’s conclusion regarding farmers’ supply response to increased demand from HGSF is very clear: “Moreover, the intervention is unlikely to be successful if farmers are unable to respond to any changes in market demand because of credit and other supply-side constraints” (*ibid*: 18).

The GSFP has volved through its share of growing pains to be considered one of the most successful programs in Africa (AU and AUDA-NEPAD 2022: 15), yielding significant benefits for nutrition and education and leading to at least some improvements in smallholder FSN. Despite the clear goals of smallholder centered agricultural development, it is evident that some changes in the food procurement model should be made, in combination with increased supply side support, to realize the full potential of these benefits.

7.2. Malawi

“For every USD 1 invested in school feeding in Malawi, USD 20 are returned to education and to the local economy. Implementation is still too fragmented largely depending on external funding. WFP is encouraging greater coherence between complementary interventions to produce better and bigger impact. To ensure sustainability of the school meals program, multi-sectoral partnerships will be crucial to adequately resource and deliver integrated packages of school meals and other school health and nutrition interventions which can be transitioned to fully owned national programs” (WFP-Malawi 2021).

Malawi is classified as a LIC and has a total population of almost 20 million of which 50.7 percent live below the national poverty line, 51.4 percent are food insecure, 17 percent are undernourished and 34.9 percent of children below five are stunted (WB 2022). School feeding has a long tradition in Malawi and can be traced several decades back to missionary schools. However, the official school meal programs in Malawi started by World Food Program on request from the Malawian Government in 1999 in Dedza district and included 24 primary schools (Nanchukwa and Mphande

2015). Around 40-45 percent of schoolchildren in Malawi are covered by school meals—estimated to almost three million children (GCNF 2022; informants). According to WFP, Malawi has the lowest school meal cost per child per year of all the countries included in Table 2 (5 USD) (WFP 2020C), however, there is uncertainty and variation regarding these estimates and what year the estimates are made. The policy environment for school feeding programs in Malawi is quite conducive with the *Department of School Health and Nutrition* having the overall responsibility, a general national school feeding policy and a separate budget line for school feeding, which funds about one percent of the school meal activities in the country (GCNF 2022, informants). A standard school meal consists of cooked porridge made from maize and soyabean, usually fortified by vitamins (Nanchukwa and Mphande 2015; informants). What a meal consists of will be influenced by seasonal variations and projects' standards. Below, four important school feeding programs in Malawi are described:

A) ***WFP School feeding programs*** (based on WFP-Malawi 2021; GCNF-Malawi 2019):

WFP's school feeding programs are implemented in partnership with the Government of Malawi (GoM); and did in 2021 target about 600,000 children in seven districts (Chikwawa, Dedza Mangochi, Phalombe, Nsanje, Salima and Zomba), and about 210,000 learners benefitted from HGSM in 169 schools in the Joint Programme on Girls Education (JPGE). School Feeding models are listed below, and sometimes include, in addition to school meals, take-home rations and cash provided to students. Usually, students' families contributed mandatory in-kind contributions in the form of fuel wood and labor to prepare the meals.

-*The Centralized Model*: WFP distributes in-kind food commodities to provide daily nutrition meals of Maize Soya Blend Plus (CSB+) to reduce short-term hunger and improve attention span in class.

-*Home-Grown School Meals (HGSM)*: Through district councils, WFP partners with schools to purchase food locally. Participating schools sign contracts with farmer groups to procure specific quantities of diversified foods. It empowers schools to be autonomous in managing their own funds for successful decentralization.

-*SF Integrated in larger projects*: The United Nations Joint Programme on Girls Education (JPGE) JPGE is a collaborative effort implemented by the Government of Malawi with technical support from three United Nations agencies (WFP, UNICEF and UNFPA) and financial support by Norway. In addition, AUDA/NEPAD is included as partner. Through the Ministry of Agriculture at national and district levels, farmer organizations and cooperatives are identified, trained and linked to schools to supply diversified, locally produced food for HGSF through a competitive process.

B) ***Mary's Meals*** (former Scottish International Relief) (Mary's Meals 2021; GCNF-Malawi 2019):

The Mary's Meals school feeding program started in 2002 and is funded by a Scottish NGO/charity and targets 1,044 primary schools and early child development centers across Malawi (Mary's Meals

2021). According to GCNF-Malawi (2019), Mary's Meals procure maize and soya beans from local small-scale farmers (HGSF), which is also stated at Mary's Meal home page that they base their school feeding programs on local procurement (Mary's Meals 2021). However, their procurement procedures appear to be more centralized than typical locally based HGSF projects, but still purchasing food within the country and keeping costs down by using a centralized approach at national level (key informant). Their food basket includes the standard Maize Soya Blend Plus (CSB+) (commonly called *Likuni Phala*).

C) ***Community-led home-grown school meals program*** (GCNF-Malawi 2019):

This HGSF program is funded and implemented by the Government of Malawi through the Ministry of Education, Science, and Technology. The objective is to meet educational-, agricultural-, nutritional- and health goals. School meals are served approximately three times per week during the school year. This program is intended to be universal and reached 705,000 school children in the school year 2017-2018. The home-grown school meals may include grains, fruits, legumes, nuts, vegetables, roots/tubers according to availability. Local farmers have been trained by extension service and sometimes given seed to produce some of the food used in this school feeding program. Implementation is to a large degree done by volunteers. In addition, support is given to community based gardens through which 7-800 schools have been supported.

D) ***GIZ School meal program*** funded by Germany and EU (GIZ 2021; GCNF-Malawi 2019):

This home-grown school feeding program started in 2016 and ended in the first half of 2022, with the objective of providing healthy school meals for better educational opportunities covering 150 schools or around 150.000 pupils. Lead implementers were the Department of School Health and Nutrition in Ministry of Education, Science, and Technology together with the project administration. The approach used were based on a) grants given to schools through the districts Councils; b) support given to local communities to be directly involved in school feeding in collaboration with the schools; and c) centralized procurement of maize at national level for food safety reasons (e.g., Aflatoxins), lack of safe storage facilities and to keep costs down (key informants). The project assisted schools in establishing kitchen and storage facilities, distributed seed to local farmers and provided various kinds of training (ibid). The meals include considerable dietary diversity.

Box 1. Malawian HGSF programs lessons learned, challenges and opportunities.

This box includes qualitative and non-generalizable findings from interviews with thirteen key informants from multilateral and regional organizations, bilateral donors, NGOs and academia including seven with direct work experience from Malawi.

Capacity development: *What kind of capacity to be developed where* in relation to HGSF is a pertinent question that will have a spill-over to costs of programs. Multilaterals such as WFP, FAO and regional organization such as AUDA/NEPAD, usually work through or together with the

governments both at national and district level; and often have a “normative” role in policy formulation and development of guidelines e.g., on procurement. To play this role, capacity is needed at central level in the multilateral organizations as well as in-country capacity at national and local levels. On the other hand, bilateral donors and NGOs may be less involved in policies, guidelines and capacity development and move more directly to implementation at local level.

Channels: Based on the above mode of operation regarding capacity development, policy formulation and guidelines, some channels might be perceived as more expensive and less effective than others. In addition, different kind of partnerships can be perceived as cumbersome with unnecessary transaction costs. On the other hand NGO projects might be perceived as less sustainable with limited collaboration with state institutions, too small and not really able to accommodate holistic, system approaches. What channel or combination of channels to choose will often entail trade-offs e.g., regarding costs and efficiency versus state ownership and capacity development.

Cost: Often, HGSF is perceived to be more costly than SF that is not home-grown. Several of the key informants mentioned high costs although they added that high cost might be reduced depending upon mode of implementation such as centralized or decentralized procurement or a combination of the two. Cost of decentralized HGSF in Malawi per child per year was estimated to 22-25 USD, while cost of centralized approached was estimated to 18 USD/child/year (both being defined as home grown). How to account for costs and benefits of the HG part of SF are challenging as indicators such as increased production and income, improved FSN and better bargaining power of small-scale farmers are demanding to measure. In addition, nutritious and diverse school meals are more costly than standard fortified maize/soya porridge. Higher farm gate prices might as well add to the cost as farmers usually get a better price from HGSF than what local traders offer them.

Implementation: HG is perceived to be difficult to implement e.g., because of demanding procurement regulations, linking schools and farmer groups (organizing small-scale men and women farmers), tender processes, possible late payment to farmers, inflation making farmer payment worth less than when the contract was negotiated, training of farmers both in production and tender processes such as price negotiations, seasonality in rain-fed agriculture in relation to stable supply, and school markets for home grown products being too small (oversupply), the need for storage facilities not least to secure food supply during the hunger period, food safety issues in relation to preparation and storage (e.g. Aflatoxins problems), and farmer groups competing over tenders which might cause conflicts at community level and contribute towards exclusions. School feeding programs used to be implemented in a centralized way. However, HGSF programs often follow a decentralized model e.g., a school grant model where schools themselves are responsible for procurement directly with farmer groups or cooperatives, and the public extension service train farmers. Each school can accommodate 5-10 farmer groups consisting of around ten farmers per group. It would take around six months to get such a HGSF program going. Adaptation to what the community can produce, what the children want to eat and what is nutritious food would be needed. An upside to the decentralized model is that not much transport needed. Another challenge relating to implementation is the huge need for firewood close to the schools to cook the meals and usually for volunteers to prepare the meals. However, willingness among parents to contribute appear high and they see the experience they obtain as beneficial for their entire families.

Farmer procurement: In general, small-scale farmers in Malawi can produce much more, but access to markets is a challenge. Home grown school feeding is appreciated by the farmers as they usually get a higher price for their products than what local traders offer. In addition, HGSF improves farmers

bargaining power versus the private traders both due to be organized in groups/cooperatives and because of having an alternative market opportunity that challenge possible traders' monopolies. A strengthening of the bargaining power usually means better income. However, some HGSF projects include too few schools to really offer a good market for local farmers. It is also no guarantee that the groups/cooperatives will win tenders. The schools make decisions on where to buy from (re school grant model). The schools appear to be reluctant to give long term contracts with the local farmers, and sometimes farmers will rather sell to others. Better storage facilities would be beneficial both for farmers and schools.

Impact: Few studies exist of the impact of HGSF on various categories of farmers' income and FNS, as well as on local communities. There is a need to know more about results of the home grown part of HGSF in different contexts, including modalities, costs and effect on local communities as well as effect on different social groups of small-scale men and women farmer. Norway is contributing towards funding such an independent study in connection with JPGE to be conducted by Harvard University and expected to be completed in 2023. Also, Academics in Malawian universities are well placed to do research on the HG part of school feeding programs.

Sustainability: HGSF is viewed as one way of performing social protection. It is somewhat difficult to imagine how HGSF in LICs could become sustainable. Projects could be handed over to the government, district authorities, local schools or local communities, but funding would be a challenge. However, the GIZ HGSF project has experienced that some well-functioning local communities (led by a chief) have been able to continue the school feeding program after the project ended. In addition, GoM is currently funding a HGSF project (re point C above), but scaling up to a country-wide, universal program is challenging due to lack of resources. Funding HGSF through joint *Funds*, may be a way of decreasing dependency on one specific project or donor by hoping that when a donor leaves the *Fund* another donor will join.

8. Conclusion

The purpose of this study is to assess the potential and realized benefits of home-grown school feeding in LICs, focusing on the extent to which these programs contribute to strengthening smallholder farmers' income, food security and nutrition. Overall, we conclude that HGSF is worth supporting for several reasons. First, because of the positive impact of school feeding on nutrition and education in LMICs. Second, because of the documented need of improving market access for small-scale farmers. That being said, there is not enough research nor impact studies on the results on smallholder incomes and FNS and the wider economy to know if and how the potential benefits of HGSF can be realized on a large scale. The research that has been done shows that to achieve the goals of improved income and FNS for smallholder farmers, it is necessary, but not sufficient, to have smallholder-friendly procurement regulations. In addition, it is necessary that smallholder farmers receive support to increase productivity and production levels of nutritious crops in demand from HGSF programs as well as training in procurement such as how to win tenders—including price bargaining and organization of farmers. If demand side (procurement) policies and supply side (agricultural production) policies are unsynchronized, benefits will fall short of the goals and

aspirations for smallholder incomes and FNS. Greater benefits to smallholder households' FNS can be realized if interventions have a special focus on assisting women regarding increase productivity and access the market that HGSF represent, as they spend more of income earned on food for the family than men do.

HGSF is a complex intervention that might take years to implement in a way that fulfills the various goals across the sectors of education, health, social protection, and agriculture. Long term financial commitment and patience in the time it takes to see results is of essence so that programs are not terminated before they have had a chance to blossom. To harvest benefits for smallholder incomes and FNS, cooperation and coordination is essential between: a) Departments in international/regional organizations such as WFP, FAO, and AU—where responsibility for HGSF is located in procurement departments, and a different department focus on smallholder-centered agricultural development; b) Different ministries in the countries such as education, health and agriculture, so that they can work together and have coordinated responsibilities; c) International/regional organizations such as WFP, FAO, AU-AUDA/NEPAD and the national and local governments, to make the program country specific (contextual), facilitate learning from experiences, and lay the foundations for sustainable, country owned programs. Also, sustainability is enhanced by securing the programs in national and local laws and regulations, a separate budget line in the national budget, and community participation in planning and implementation. Sustainability cannot be expected to be secured at national or local level in LICs in the near future. A joint international HGSF Fund for LICs, for instance sourced through innovative funding modalities, could be explored to enhance sustainability of home-grown universal school feeding programs in all interested LICs.

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