Learning paper
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Netherlands East Africa Dairy Partnership

School Milk Programme Learning paper

“A parent-led approach with dairy products for pre-primary and primary school children”

SNV

Yoba for Life

WAGENINGEN UNIVERSITY & RESEARCH

Colophon

School Milk Programme Learning paper
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Summary

SNV, Yoba for Life and Wageningen University and Research have been collaborating over the years around two dairy sector development projects, The Inclusive Dairy Enterprise (TIDE) in Uganda and Building Rural Income through Inclusive Dairy Business Growth in Ethiopia (BRIDGE). Both projects are working at supply and demand levels and have been promoting a parent-led school milk programme. In this paper, we start with the recognition that national school feeding programmes, while beneficial at educational, nutritional and socio-economic levels, still struggle in low-income countries to reach a majority of children and communities. We explain the reasons that led us to pilot and scale a parent-led approach with dairy products for pre-primary and primary schoolchildren. The case studies of school milk in our Ugandan and Ethiopian programmes are discussed, our operational approach summarized and our current results presented. In our conclusion, we reflect on potential longer term prospects, such as the creation of a milk-drinking culture and sector development, the role of milk in school as a first step towards a healthy diet and the valorisation of parental and community contribution in school feeding in complement to the strategic roles of donors and governments in scaling school feeding in low-income countries.

Introduction: The current state of school feeding

Benefits of school feeding

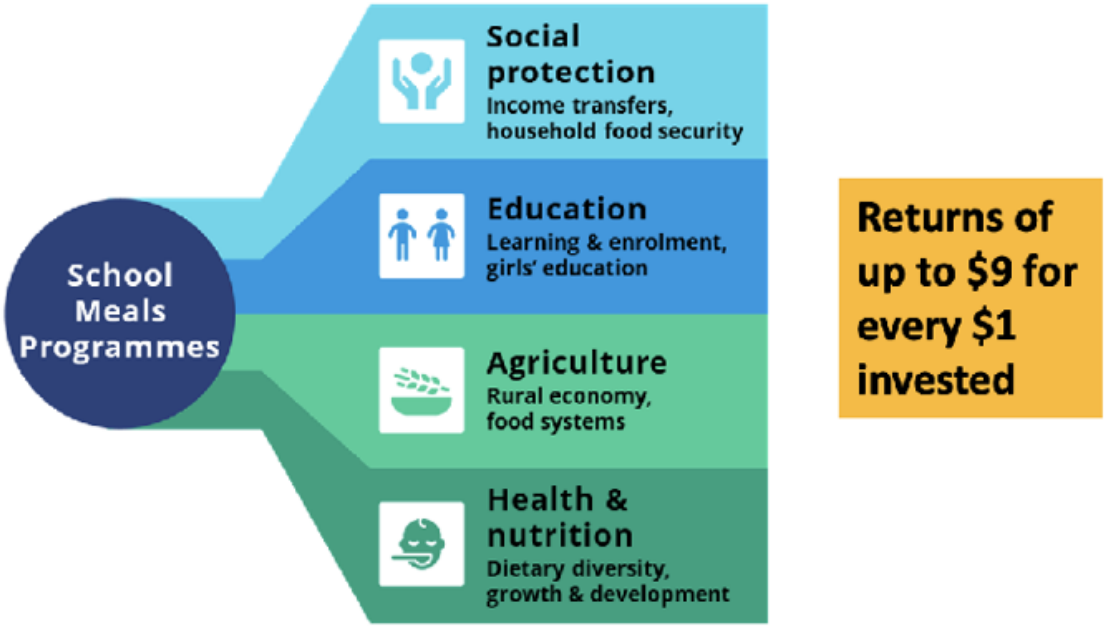
"School feeding programmes play a critical role in encouraging the poorest families to send their children – sons, and especially their daughters – to school. Once children are in the classroom, school meals ensure they are well nourished and ready to learn."[1]

The importance of school feeding is well established and widely recognized. Providing nutritious food at school is good for educational achievement, for nutrition and health, for inclusion of girls and of the most vulnerable children and, if done right, for local economies. As illustration, we can mention a systematic review of 216 education programmes in 52 low- and middle-income countries that found that school feeding programmes are one of the few education interventions that show positive impact in both school participation (enrolment, attendance, completion) and learning (scores on cognitive, language and mathematics tests).[2] A meta-analysis of school meals programmes across 32 sub-Saharan countries showed that on-site meals combined with take-home rations increased the enrolment of girls by 12%.[3] The Midday Meals Scheme in India, the largest school feeding programme in the world, eliminated daily protein deficiency and decreased calorie deficiency by almost 30% and daily iron deficiency by nearly 10% in the state of Andhra Pradesh.[4] If we focus on the contribution of dairy to nutrition in the context of school feeding, peer reviewed studies have repeatedly shown a positive impact on calcium, vitamin D and anthropometric measurement.[5] School feeding programmes can reduce poverty by boosting income for households and communities. For families, the value of meals in school is equivalent to about 10% of a household's income. For families with several children, this can mean substantial savings.[6] Buying local food creates stable markets, boosts local agriculture, impacts rural transformation and strengthens local food systems. In Nigeria, 6 million locally sourced eggs and 80 tons of fish are consumed by 9.2 million schoolchildren across the nation every week.[7]

And those are only a few examples of the multifaceted impact that school feeding programmes can have at scale. When considering that the return on investment is estimated at USD 9 for each dollar invested[8] – across different sectors such as agriculture, education, health and nutrition and social protection – it is obvious that every child should benefit from this opportunity.

[1] WFP. 2023. State of School Feeding Worldwide 2022. Rome, World Food Programme.
[2] Snilstveit, B, Stevenson, J, Phillips, D, Vojtkova, M, Gallagher, E, Schmidt, T, Jobse, H, Geelen, M, Pastorello, M, and Eyers, J, 2015. Interventions for improving learning outcomes and access to education in low- and middle- income countries: a systematic review, 3ie Systematic Review 24. London: International Initiative for Impact Evaluation (3ie).
[3] Bundy et al. (2018) Re-imagining School Feeding: A High-Return Investment in Human Capital and Local Economies, Disease Control Priorities 3, v. 8
[4] Afridi, F, 2009. The impact of school meals on school participation: Evidence from rural India, *Journal of Development Studies* 47(11): 1636–56.
[5] International Dairy Federation, 2020. 'The contribution of school milk programs to the nutrition of children worldwide', Bulletin of the International Dairy Federation 505/2020.
[6] Bundy et al. (2009) Re-thinking School Feeding: Social Safety Nets, Child Development, and the Education Sector, Directions in Human Development, World Bank Group, (1) xvi
[7] Government of Nigeria, 2018. Investing in our people: A brief on the national social investment programs in Nigeria, p. 13. https://socialprotection.org/
[8] Research Consortium for School Health & Nutrition and the Sustainable Financing Initiative, 2022. The investment case for school health and nutrition, available from https://healtheducationresources.unesco.org.

Figure 1: School meals outcomes and return on investment[9]



Limitations of government- and donor-funded school feeding in low-income countries

Aware of these positive impacts, governments and international donors have been investing in increasing the coverage and the quality of national school feeding and school health programmes across the world. The COVID-19 pandemic and widespread school closure has been catalytic in the widespread realization of the importance of school feeding for children, as suddenly millions of children were deprived of this essential service. A strong dynamic emerged post-pandemic and, in 2022, the number of children being fed through those national programmes had already rebounded to 418 million, exceeding the 388 million reported pre COVID-19 in January 2020.[10]

Yet not all children benefit from this opportunity equally. Despite overall positive progress, the inclusion of children in a national school feeding programme is still low in many countries. For example, only 18% of primary school children are enrolled in national school feeding programmes in low-income countries. In East Africa, when considering the coverage of those national programmes, inclusion of primary schoolchildren is still low: 0% in

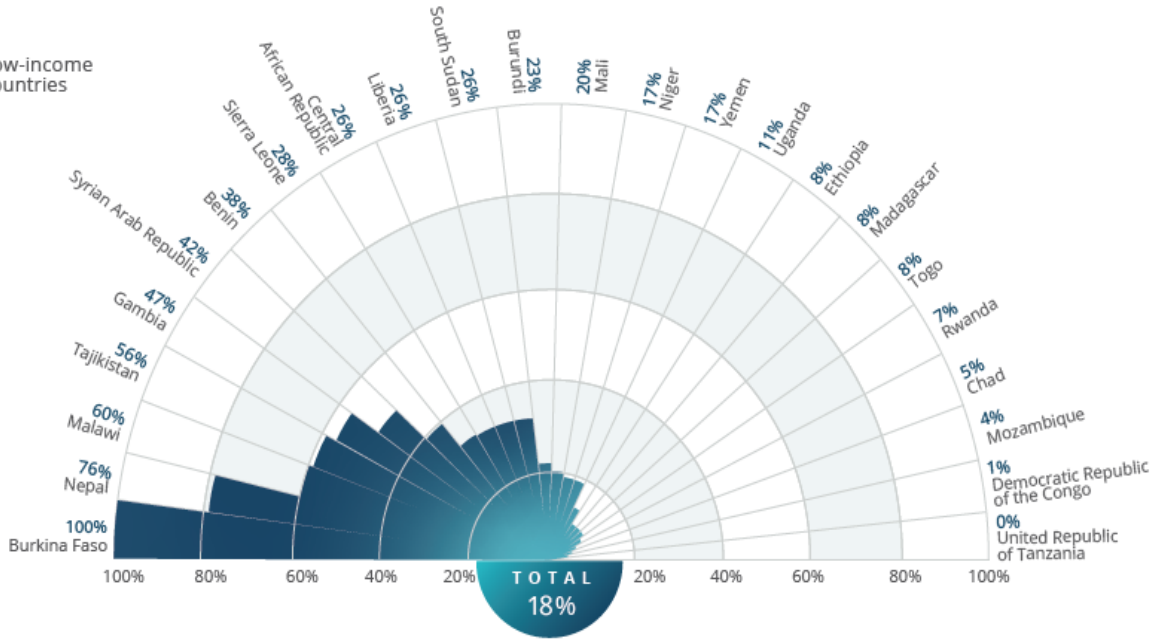
In this paper we distinguish and define:

- National school feeding programme: A programme managed by the government either alone or with the support of a development partner to provide food on a regular basis to schoolchildren. We qualify these programmes **as government or donor funded**.
- Parent- or community-led school feeding program: A program managed by government, schools and/or parents without the continuous support of a development partner to provide food on a regular basis to schoolchildren. We qualify these programs as **parents funded** when only parents of the students pay contributions or **community funded** when all households in an area are paying contributions regardless of having school age children.

[9] Research Consortium for School Health & Nutrition and the Sustainable Financing Initiative,.
[10] WFP. 2023. State of School Feeding Worldwide 2022

Tanzania, 7% in Rwanda, 8% in Ethiopia, 11% in Uganda, 22% in Kenya, 23% in Burundi and 26% in South Sudan.[11]

Figure 2: Percent of schoolchildren in low-income countries enrolled in national school meals programmes[12]



Government- or donor-funded school feeding programmes have emerged; some have thrived, but many have faltered due to changing political or financial priorities. In Kenya, most adults still remember the Moi era national school milk programme. This programme was discontinued in the nineties due to lack of funding. Examples of temporary gains and backsliding, due to project launch and closure, unfortunately abound.

In that sense, in many countries, child feeding in or out of school is mostly the sole responsibility of parents. Under this arrangement, pupils may bring a packed lunch to school, which is often the same food as they have at home for dinner or breakfast; a few will get processed snacks, and some go all day without food. There are examples where parents, communities and schools in many areas organize and pool resources to provide food at school. These initiatives are an improvement compared to relying uniquely on individual responsibility of parents.

While it is evident that government- and donor-funded school feeding have to be scaled up and strengthened, it is also evident that parents and communities are already playing their role as caretakers and are investing in their child nutrition at school. We hope to show in this paper, based on our work in Uganda and Ethiopia, how initiatives from parents and communities can be supported, strengthened and scaled up to unlock the positive impact of school feeding. Not all parents in low-income countries can afford to increase their investments in their child's nutrition, but many can. Governments and donors can then strategically complement parents' investments and ensure that limited funding can be stretched further.

[11] ibid.
[12] ibid.

The parent-funded model

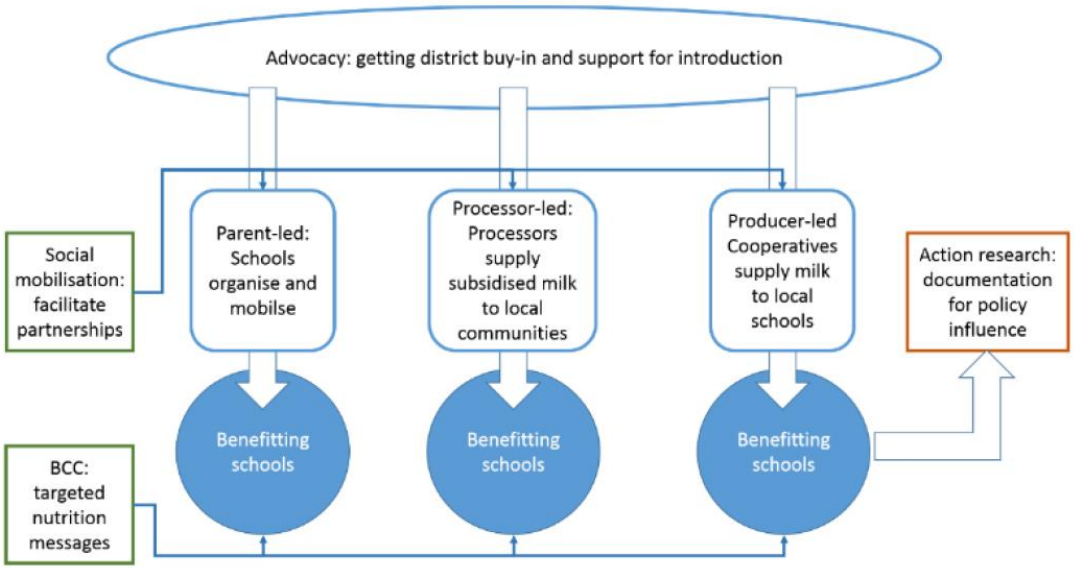
Parents invest in food for their children in and out of school. Unfortunately, this food is often not diversified or nutritious enough to cover all the needs of a growing, learning and active child. On top of that, a small part of food expenditure, even for poor households in sub-Saharan Africa, is spent on ultra-processed food (such as sugar-sweetened beverages).[13]

The basic hypothesis of the parent-funded school feeding approach, grounded in nutrition behaviour change theories, is to consider that food consumption choices can be influenced and that parents can invest more resources on food and prioritize healthy foods. The logic is simple: parents and schools can be sensitized about the nutritional status of their children and the benefit of organizing regular and nutritious school meals. The type of food to be prioritized depends on the local nutrition gaps but also on local availability and affordability of the food. In both our Ugandan and Ethiopian case studies, milk was prioritized under these considerations.

In Uganda, school milk proponents make the case: "If you can drink a beer every evening, you can pay for a glass of milk for your child."

Incentives to kick-start the adoption of an organized and diversified school meal can be tailored to particular situations. The objective is that, even after a short period, parents, teachers and local government officials will perceive the multiple benefits of quality school feeding on education, nutrition and the local economy and will decide to sustain the investment. Starting with a few schools, the model will be witnessed by neighbouring schools and communities and gradually spread through a snowball effect.

Figure 3: SNV Uganda: The Inclusive Dairy Enterprise (TIDE) programme school milk approach[14]



[13] From Dolislager, M, Liverpool-Tasie, LSO, Mason, NM, Reardon, T, and Tschirley, D, 2022. Consumption of healthy and unhealthy foods by the African poor: Evidence from Nigeria, Tanzania, and Uganda. Agricultural Economics, 53, 870–894. https://doi.org/10.1111/agec.12738: "Ultra-processed food (e.g., sugar sweetened beverages) form 12% of the consumption of the poor, versus 20% and 32% for the lower- and upper-middle strata."

[14] SNV, 2017. A working paper on the SNV TIDE school milk program in southwestern Uganda.

Why milk products in schools?

School milk programmes have a long-standing history, with currently around 160 million children benefiting from them. Nearly all school feeding programmes in high and upper middle-income countries integrate dairy in their menu. Unfortunately, only 33% of school feeding programmes in low-income countries manage to offer dairy products.[15] School feeding in low-income countries has been historically focused on providing calories for children, notably through cereals, legumes and oil.[16] This model – focused on efficiency, on keeping food costs low and on standardization with centralized procurement – has gradually evolved to consider the nutritional quality of the food proposed, with more attention to micronutrients and specific food and nutrient gaps.

In parallel, interest in the potential for the local economy of social investments has grown. Social programmes have been sensitive to procure food for their programme as locally as possible. We have seen, in recent years, increased attention for home-grown school feeding programmes,[17] which provide safe, diverse and nutritious food, sourced locally from smallholders to children in schools.[18] It is not only cereal, legumes or oil that can be sourced locally; due to short transport and storage time, fruit, vegetables, dairy and even meat can also be added to school menus and offer a balanced and healthy diet. Besides the nutritional aspects, culture, environment and climate change should be considered in the selection of school meal components. Trade-offs might need to be made between these aspects when aiming for a dietary transition.

Our initiative selected dairy – boiled milk, traditional yoghurt or probiotic yoghurt – as a strategic food commodity in our target areas in Uganda and Ethiopia. This choice was made given local availability of dairy, low consumption, nutritional profile, potential to cover dietary gaps, ease of consumption in schools as a snack (as many public schools do not have lunch at school) and rapid acceptance by children. These benefits outweigh the relatively higher costs of dairy in some regions, potential risks such as foodborne pathogens and overall low milk quality. To minimize health risks, different strategies were used in Uganda and Ethiopia. Fresh raw milk was cooked into porridge or processed into probiotic yoghurt, and regular quality control monitoring was implemented.

While the project did not use a randomized control trial approach to study the school milk impact on schoolchild nutrition outcomes, evidence from another project shows that increasing milk consumption is correlated to reduced rates of stunting.[19] Growth stunting is evidence of chronic malnutrition in children and is associated with macro- and micronutrient deficiencies, frequent disease incidence and poor care practices. Stunting has a long-term negative impact on physical and mental development and is associated with lower productivity and lower income earning capacity later in life.

[15] IDF, 2022. "School Milk Programs and Highlighting Other Public Nutrition Approaches - Reach and Impact", 14 September 2022 presentation at World Dairy Summit, Available at YouTube.
[16] *GCNF, 2021 "Global survey of school meal programs", Global Child Nutrition Foundation.*
[17] WFP, n.d. Home-grown school feeding, World Food Programme, Available at wfp.org.
[18] WFP, 2017. Home grown school meals benefit children, farmers and communities, World Food Programme, Available at wfp.org.
[19] Haile, B and Headey, D, 2023. 'Growth in milk consumption and reductions in child stunting: Historical evidence from cross-country panel data', Food Policy, 118: 102485, doi:10.1016/j.foodpol.2023.102485.

Local economy benefits of dairy in schools

Dairy plays a pivotal role in the economies of Kenya, Tanzania, Ethiopia, Rwanda, Uganda and, to a lesser extent, Burundi. It yields a reliable income source for millions of farmers, while also contributing to food security and nutritional requirements of the population. Governments are striving to safeguard the livelihood of their domestic dairy farmers while simultaneously ensuring access to affordable milk for their consumers. The increasing demand for milk, mainly due to population growth, necessitates matching production increments; otherwise, the gap will need to be filled through imports.

In East Africa, milk production is carried out across three broad farming system categories: the grazing or (agro-)pastoralist system, the mixed crop – livestock system, and the (semi-)specialized farming system.[20] The mixed crop – livestock and (semi-)specialized systems are most likely to supply the majority of the home-grown school milk programmes as they have permanent proximity to the schools. However, in pastoral communities, sourcing the milk from pastoralist herds should also be considered. On farm human consumption of milk in both Uganda and Tanzania is estimated at around 30% of daily production.[21] Of the remaining 70%, the majority is sold in the informal market; less than 30% of national milk produced is formally marketed. Per capita consumption per country is depicted below.[22]

Table 1: Per capita milk consumption in 2019

	Kenya	Ethiopia[23]	Uganda	Rwanda	Tanzania	Burundi
Litres per year	110	19	62	69	50	6
ml per day	301	52	170	189	137	16

The World Food Programme (WFP) is implementing home-grown school feeding programmes worldwide, including in sub-Saharan Africa. A modelling exercise was done in Kenya in 2007 to assess the costs and impact of this approach, and the main conclusion was that the income of smallholder farmers increased, but much more if combined with an agricultural development programme. Increasing productivity is also important to avoid negative price effects.[24] These findings are further re-confirmed in a more recent study by FAO in Zambia, which found that local sourcing of certain food items for school meals can even have a negative effect on farmer income and welfare. Farmers reallocated their resources and chose for the more stable market of the school feeding programme, at the expense of their own consumption and more profitable but price-volatile crops. When combined with a programme focusing on productivity increase, these effects were avoided and the farmers actually benefited.[25] Finally, a study in Ghana showed no convincing evidence that the school feeding

[20] Oosting et al. The multifunctional role of cattle in East African food systems: perspectives for climate-smart dairy development, NEADAP Background Paper, 2023
[21] SNV, Dairy Nourishes Africa, Tetra Laval Food for Development, Uganda school milk pilot concept note, "Improving nutritional and educational outcomes, and catalyzing economic development through Uganda's dairy value chain", 2020
[22] Makoni, N; Mwai, R; Redda, T; Zijpp, A. van der; Lee, J. van der. 2013. White Gold; Opportunities for Dairy Sector Development Collaboration in East Africa. Centre for Development Innovation, Wageningen UR (University & Research centre). CDI report CDI-14-006. Wageningen.
[23] TRAIDE Ethiopia, "Investment Opportunities in the Ethiopian Dairy Sector, 2021
[24] WFP, "Home-grown school feeding, A framework to link school feeding with local agricultural production", 2008
[25] Prifti, E. and Grinspun, A. 2021. Impact evaluation of the Home Grown School Feeding and Conservation Agriculture Scale-up programmes in Zambia. Rome, FAO. https://doi.org/10.4060/cb1841en

programme affected smallholders' market structure, farm, non-farm or household income.[26] This could be explained by the fact that the largest procurement channel was through traders, which would reconfirm the need to collaborate with farmers on increased productivity and efficiency.

School feeding can generate sustainable and predictable demand for locally grown food and thereby positively impact the agricultural system and food supply, including the operations of smallholder farmers.[27] However, this is not a guarantee and therefore programmes sourcing school feeding locally should evaluate carefully whether there is a surplus available already or how farmers can be supported to increase productivity without jeopardizing income, own consumption and general welfare.

Since the COVID-19 pandemic, it has also become more apparent that for the sustainability of the school feeding programmes, local sourcing of food is crucial as global supply interruptions have direct and severe implications for schools and students.

Case studies from Uganda and Ethiopia

SNV, in partnership with Yoba for Life, has undertaken substantial endeavours to advance the adoption of parent-funded school milk and yoghurt programmes in Uganda and Ethiopia. These two nations exhibit distinct socioeconomic dynamics, as well as distinct features within their dairy and educational sectors.

The table below summarizes the most important differences between Uganda and Ethiopia in relation to factors affecting the school milk and yoghurt programme.

Table 2: Differences between Uganda and Ethiopia in relation to factors affecting the school milk and yoghurt programme

	Uganda	Ethiopia
Government involvement	The government has a high interest in school milk, as an increase in national milk consumption is of clear economic benefit to the country.	The government had never considered the use of dairy products in school feeding programmes. Possibly its interest will grow as the programme uptake is growing in Ethiopia.
National policy	Guidelines on school feeding and nutrition programmes in primary and post primary schools and institutions have been in place since 2013 with emphasis on parent-led school feeding; most meals	While national school health and nutrition strategy and school feeding policy exists, its implementation was limited in Addis Ababa beyond donor-driven safety net responses. Recent inflation has caused the Ethiopia sub-national

[26] Gelli et al., "School meals as a market for smallholder agriculture, Experimental evidence from Ghana, IFPRI Discussion paper 02045, 2021

[27] Verguet S, Limasalle P, Chakrabarti A, Husain A, Burbano C, Drake L and Bundy DAP (2020) The Broader Economic Value of School Feeding Programs in Low- and Middle-Income Countries: Estimating the Multi-Sectoral Returns to Public Health, Human Capital, Social Protection, and the Local Economy. Front. Public Health 8:587046. doi: 10.3389/fpubh.2020.587046

	comprise less nutritionally diverse maize and beans-based menus.	government to take school feeding into consideration as a safety net which provides an indirect financial transfer to the parents.
School feeding culture at baseline	It is common for schools to prepare food and feed the children, as paid for by the parents, except for the poorest public schools.	A habit of providing food at school is absent, apart from donor-funded school feeding programmes and a government-funded school feeding programme in Addis Ababa. Oromia region also implements a community-led school feeding programme. For those who can afford it or prioritize it, children carry lunchboxes to school.
Milk price per litre, farmgate	~ $ 0.20	~ $ 1.20
Familiarity with milk	In Central and south Western Uganda, milk is a common product, though consumption still needs to be boosted (some households have a focus on sales instead of consumption).	In most areas where the programme is promoted, familiarity with milk and milk products is lower than in Uganda. Consumption is low compared to other countries in the region due to price and religious limitation of animal products, including milk, in diets.

Uganda has a much more conducive environment to introducing a school milk and yoghurt programme than Ethiopia. These differences led to the application of varied implementation strategies with varying outcomes. Hence, an initial key takeaway is the absence of a universal blueprint for introducing school milk and yoghurt programmes, as the approach must be tailored to each country's and region's specific context.

The different strategies and approaches used to implement the programme in Uganda and Ethiopia respectively are summarized in Table 3 below.

Table 3: The different strategies and approaches used to implement the school milk and yoghurt programmes in Uganda and Ethiopia respectively

	Uganda	**Ethiopia**
Government involvement	Strong endorsement of government at national level and at local level in direct interactions with the school. This highly boosts the uptake of the programme.	No active involvement of government so far, apart from one region in which the government organizes community contribution to the programme for 59 public schools. In all other regions, the local government is informed and appreciative, but not actively involved.
The importance of available policies	Uganda's Education Act of 2008 states that feeding children at school is the responsibility of the parents. The local government encourages and even persuades school administrations to take up the programme.	There is an assumption that the government is responsible for providing food at school, fuelled by the notion that they do this for Addis Ababa public schools. A popular assumption is that the government should or indeed will work towards rolling this out countrywide.

School involvement	School leadership is the point of entry. They will have to accept the idea after which they, together with the project team, can have a discussion with the parents.	School leadership is the point of entry. They will have to accept the idea after which they, together with the project team, can have a discussion with the parents.
Parent involvement	The programme cannot run without involvement of the parents, as only children of the parents who have paid for the product will be able to participate in the programme.	In private schools and many public schools, parents need to consent to the programme and pay for it. In schools where community contribution is mandated by the government or in schools where parents are not asked for a contribution (private or church funding), the school management may decide to feed the milk or yoghurt without involving the parents.
Promoted products	Around 100–150 ml per day of raw milk, which would be boiled at the school, together with maize porridge or probiotic yoghurt.	Boiled milk (not mixed with anything), or probiotic yoghurt. Between 150 ml and 250 ml, two to three time a week depending on the school.
Type of schools engaged in the programme	Due to affordability, public and private schools equally participate. Due to high government involvement, public schools are even more likely to pick up the programme.	Due to the high cost of milk, private schools are much more likely to participate. Public schools are only likely to participate when there is an element of external funding (from wider community, corporate social responsibility, church, etc.).
Subsidies applied	Zero subsidy on the milk and yoghurt from the beginning. Matching grant to schools that have attained 50% enrolment of learners consuming milk: 50% financial support towards construction of fuel-efficient cooking stoves, installation of water purification systems or construction of kitchen.	Due to the relatively high cost and the unfamiliarity with the programme, a subsidy model was required to kick-start the uptake. So far, the subsidy model has not been uniformly implemented, but on average consists of two weeks of free yoghurt, two months at 50% funding and one month at 25% funding, after which the subsidy ended.
Suppliers: smallholders or processors	The project promoted milk supply through cooperatives, although some schools made private arrangements with farmers. Supply of probiotic yoghurt was through the small-scale producers (trained by the project).	Boiled milk prepared by relatively larger scale farmers, or probiotic yoghurt prepared by small-scale producers (trained by the project).
School organisation	The management of government schools meets periodically at district level, which provides a great opportunity to periodically discuss the programme with many schools in attendance.	Most of the targeted schools were not clearly organized and thus approached individually. Only schools supported through community contribution promoted by government were strongly organized. In Addis Ababa there is a private school association which the project attempted to work with, but this did not lead to the expected results.
Challenges and pitfalls	The supply of loose milk mixed in porridge poses traceability challenges.	

	From anecdotal evidence, some schools do not use all money collected from the parents to purchase the agreed upon amount of milk but buy lower quantities of milk instead.	
Partial enrolment of children within the same school poses ethical challenges for those children of the parents who did not or could not pay.	Due to their high cost, milk products do not always seem to be the most obvious choice to enrich the children's diet.	

A detailed overview of the Ugandan example

In Uganda, the school milk programme became a success through SNV's multisectoral and multi-stakeholder implementation linkages. The starting point for these engagements was the Education Act of 2008, which states that it is the responsibility of parents to provide food for their children at school, and that it is the school's responsibility to collect fees towards that purpose.

- At the national level, SNV facilitated the establishment of a national school milk task force comprising representatives from the Ministry of Education and Sports, the Ministry of Health, the Dairy Development Authority, Ministry of Agriculture, Animal Industry and Fisheries and SNV, which was inaugurated in October 2017. At this occasion, the Minister of Education & Sports and the First Lady of Uganda, Janet Kataha Museveni, endorsed a National Declaration on Parent-led School Feeding. This Declaration put parents at the centre of school feeding for their children. The established taskforce supported implementation of the programme through linkages and alignment to national level policies and actions. They participated in joint supervision, monitoring, validation and verification of the programme in implementing schools.
- Following the establishment of the national task force, SNV facilitated the establishment of district school milk task forces. It was responsible for the sensitization and mobilization of communities to support the school milk programme, explain school feeding guidelines and convene meetings of Parents and Teachers' Associations (PTAs) to convince parents to pay an agreed fee for their children to access a meal with milk at school. SNV contracted community-based organizations in each of the districts to be member of these taskforces on behalf of SNV in the role of local capacity builders.
- At the school level, head teachers convened parents meetings to sensitize parents to the programme and persuade them to join. The school is responsible for the purchase of milk or yoghurt and administration of the scheme. SNV/TIDE gave support through a matching grant to schools that attained 50% enrolment of learners consuming milk. The incentive included 50% financial support towards construction of improved kitchens, construction of fuel-efficient cooking stoves and installation of water purification systems.
- At parent level, through PTA meetings and one-on-one contacts, parents discussed the proposal and committed to making payments each term, ranging from $8 to $12 per child annually to buy either yoghurt, or to buy milk, maize flour and firewood (equivalent of 2% of household share of food expenditure).

- Primary and pre-primary schoolchildren consume 100–150 ml of milk daily in maize/millet porridge or a pouch of 125 ml probiotic yoghurt and receive additional sensitization on the benefits of consuming dairy products.
- The milk is bought from dairy farmers who work through cooperative societies, while the probiotic yoghurt is bought from small-scale dairy processors who were trained by Yoba for Life. SNV, through the local capacity builders and Yoba for Life, facilitated supply contracts between schools and the suppliers.

Key results in Uganda

- Change in public perception from "parents cannot afford to pay" to "it is unacceptable for children to go hungry"
- 922,779 schoolchildren are drinking milk as part of school meals in 2,482 different schools
- The total volume of milk consumed daily is approximately 125,549 liters generating a daily income to supplying farmers of 126 million UGX. This correspond to an annual income to the farmers through milk sales of 8.9 million USD.
- 20,084 schoolchildren are consuming yoghurt in pouches of 125 ml
- growth in milk consumption in the participating schools with an average enrolment in the milk program in participating schools of 78% of students. The milk consumption for these students is fully paid by parents.

A detailed overview of the Ethiopian example

In Ethiopia, our school milk programme is relatively new as it started in early 2021. As mentioned, the conditions in Ethiopia for a parent-led school milk programme were not very favourable, and an approach through pilots was selected. Hence the project team took a pluriform approach to try and assess their best entry points to get the programme running. The various approaches had the following elements in common:

- Identification of schools that are open to the idea, commonly through a "door-to-door" approach
- Sensitization of school management, teachers and parent representatives is made with both the government education representative and the milk producer in attendance. The aim is to create a strong linkage. This is sometimes done in workshops with several schools.
- Parent meetings to inform parents, ideally, with the yoghurt or milk producer present and samples being distributed. Parents indicate their willingness to join the programme. This step may be omitted in cases where a donor pays for the programme
- To build confidence, school management, teachers and parent representatives could visit:
  - other schools that have already successfully adopted the programme
  - producers, to build confidence about the origin and production methods of the milk or yoghurt
- Two agreements are being signed: one between the producer and the school (supply agreement) and the other between the school and SNV (grant agreement)
- Schools are responsible for collecting money from parents, topping it up with the grant from SNV and paying the producer. Schools are advised to open a separate bank account for this purpose. In some cases, a parent committee is established to oversee these processes
- The cost of probiotic yoghurt without subsidy is 200–220 ETB/child/month for two to three servings a week of 150–250 ml depending on the area.
- Specific agreements are being made between the producer and the school about the mode of delivery.

Some strategies emerged for specific target groups:

- In upper-class private schools, the subsidy programme was not the main convincing factor, and it was found that even severely slimmed down subsidy models (e.g. only running for two weeks) could obtain the same results as the longer subsidy programmes. The crucial factor here was to create trust around the product. The product had to come from a trusted source, certificates needed to show that the product was accepted by (local) government and scientific evidence had to back up the use of the product.
- In the low-fee private schools, trust was also important, but the subsidy model of several months was required to lower the initial threshold for parents to join the programme. Once they were convinced of the reliability of the programme and the benefits to their children, which took several months, some parents were willing to fully pay for the programme, even though this posed a strain on their household finances.
- A number of public schools, especially in the Amhara region, have managed to collect the required fees through solidarity mechanisms, in which some of the children that could not afford the programme are sponsored by the supplier of the milk or yoghurt, by parents of other children or by the school itself. Some schools have sources of income such as rental buildings.
- In one area in the Oromia region, the local government organized community contribution to pay for milk in 59 schools. In that model, all households contributed to school feeding, not only households with children, as it is considered a public good. To fund this programme, the government raises in-kind donations (i.e. 30 kg of wheat collected at harvest) in rural areas and a mix of in-kind (i.e. 3 kg of maize) and cash (depending on income) donations in urban areas. Government employees also contribute 1% of their salary. The in-kind donations were stored in each school and sold to pay for milk when needed.
- A number of schools or day-care centres that are run by donor organizations or private companies (e.g. Sher Ethiopia Rose farm) agreed to pay for the children at their funded schools to have milk or yoghurt. There were also examples of “normal” public schools that were able to secure external funding to be able to adopt the programme, for example from a neighbouring mosque..

Key results in Ethiopia

Before the holiday closure in July 2023, a total of 25,197 students were enrolled in the school milk programme country-wide, of which 53% consumed probiotic yoghurt and the other 47% consumed boiled milk. Note that the programme was barely two years old at that point.

Of the children, 49% are from public schools in which a considerable number benefit from some kind of funding, 40% are from private schools paid for by their parents and 11% are from internally displaced people settlements in Tigray.

Some of these children were still consuming an SNV-subsidized product, hence the numbers consuming milk or yoghurt after the subsidy programme has been completely phased out will need to be monitored.

Early results indicate that some schools and parents can maintain the school milk programme without subsidies. In a sample of 10 schools in Sidama that had fully stopped being subsidized at the end of the 2022–23 school year, around 60% of the parents who had enrolled under a full subsidy scheme were contributing the full cost of dairy for their children. These results need to be confirmed during the 2023–24 school year, but they indicate that there is potential for the programme to be sustainable or grow.

Long-term prospects

Fostering a milk drinking culture as part of sustainable local economic development

The school milk and yoghurt programme carries the potential not only to enhance the nutritional and educational outcomes of participating children during their school years, but also to foster a lasting culture of milk consumption that extends to future generations.

In 1979, the then president Daniel Arap Moi started the Nyayo milk programme in Kenya, whereby all primary schoolchildren would receive a packet of milk every day. This programme ran at full capacity until 1989, and then died a gradual death between 1989 and 1997 due to financial constraints.[28]

While the exact scientific link remains unproven and multiple variables are likely at play, it is striking that Kenya's milk consumption presently surpasses that of neighbouring countries by a factor of two or three, or even close to 6 if compared to Ethiopia. This marked difference raises the suggestion of a connection between this consumption trend and the historical school milk programme. Anecdotal evidence from beneficiaries of the Nyayo milk initiative fuels the notion that a daily milk consumption habit is crucial. These beneficiaries attest that their belief in the importance of regular milk intake drives them to ensure their children receive milk daily.

In that sense, school feeding can generate sustainable and predictable demand for locally produced milk and have a positive and sustainable impact on local agriculture reaching beyond the school and lasting over time. However, this is not a guarantee and therefore programmes sourcing school feeding locally should evaluate carefully and select a supply system based on farmers' ability to increase productivity without jeopardizing income, own consumption or the environment.

School milk as part of a healthy diet approach

While the primary objective of most school feeding is to keep children in school, the provided meals (breakfast, lunch, snacks, milk, etc.) alleviate short-term hunger, increase attention span, facilitate learning and obviate the need for children to leave school to find food. As nutrition objectives become more central, the role of school feeding is not only to provide a specific nutritious food, but to promote healthy and nutritious diets and instil food habits for healthier diets. "School menu options that utilize nutritious foods available in the different communities should be developed and promoted across the country."[29] Diets in developing countries are commonly starch-based and do not contain the necessary diversity of vegetables or include the recommended amounts of animal-sourced foods. The choice of products is determined by local cultural context, availability and affordability of different nutritious foods that can contribute to closing the nutrient gaps in diets. If milk is available and affordable, it is a logical intervention to promote its consumption to achieve better dietary outcomes. Furthermore, milk can be a good choice as a first food to start diet diversification at school, due to its ease of consumption as a snack and lower disturbance of education and school activities, and quick acceptance and positive response of most children. Once the system to supply locally sourced fresh food is well established in a school, it will be easier to introduce other foods to reach the targeted diversification.

[28] FAO, 2004. "Issues in the development of school milk", Food and Agriculture Organization, Available at fao.org.

[29] SNV Uganda, "Parent-led school feeding: Lessons from the SNV School Milk Program", policy brief, 2020.

However, if milk is less available or less affordable, an objective comparison with substitute foods (such as eggs or small fish) should be made, and families should be advised to include in their diets the product which is objectively most appropriate in their situation. Thus, the objective of the parent-paid school feeding programme should not be primarily to promote milk, but to promote healthy and nutritious diets.

Building on parents' contribution to increase the scale of school feeding

Some of the main limitations of the programmes presented in this paper relate to the potential exclusion of children from the poorest families that results from the parent-paid approach and the need for a development organization (SNV in this case) to promote the programme.

Regarding exclusion, when the programme is just beginning at a school it is common to see a small group of children having milk, while the rest of the children whose parents had not contributed funds watch hungrily. It was also shown that school encouragement and peer pressure from the children eventually results in an increase in the number of children whose parents pay for the programme. However, there are households for which it remains very difficult or impossible to afford the programme. Schools' management teams and teachers are very sensitive to this risk of exclusion and the impact this can have on children. The schools are encouraged to actively find locally adapted solutions to integrate the children from the poorest families, such as accepting in-kind contribution, volunteer time commitments from parents and solidarity mechanisms between parents or support from the wider community, companies, or churches. Any solidarity mechanism has the risk that most parents will refuse to pay and the school milk programme will stop. From our experience, it is possible with strong leadership and effective communication between schools and parents to have acceptable solidarity schemes that reflect community practices.

Learning from our case studies in Uganda and Ethiopia, we have seen that around 78% in Uganda and significantly less at this stage in Ethiopia of children can benefit from school milk fully paid for by their parents. Differences between countries can be explained by socioeconomic factors, cost of milk, the duration of the school milk programme, dairy consumption culture and different expectations about the state's historical role in school feeding. We find these figures encouraging and a first step on the road of improved nutrition for many children that is based on community strength and parents' capacity to prioritize good nutrition if given the opportunity.

Leveraging donor support for more sustainable and local ownership of school feeding models

In regard to the involvement of a development organization, we observe in Uganda that:

> *Whereas the SMP [school milk programme] does seem a sustainable initiative given the strong buy-in at the various levels of the SMP and the link to national policy, the buy-in from schools seems to be largely driven by SNV's attractive matching funds for water purification installation, kitchen upgrading, and energy saving boilers. SNV also hired grass root organizations (commonly known as Local Capacity Builders) to support the schools in implementing the SMP. What would schools do without this support? There is need to rethink the school feeding policy to ensure its sustainability with or without support from development organizations like SNV.*[30]

We argue that funding from donors and governments, instead of fully covering the cost of school feeding schemes, could be used in two strategic manners.

[30] SNV Uganda, "Parent-led school feeding: Lessons from the SNV School Milk Program", policy brief, 2020.

First, it could be given in the form of incentives and subsidies, to trigger parents' contribution to nutritious food at school and/or to create schools' capacity to manage the school milk/yoghurt programme. After this first phase, schools and communities need to be given the responsibility to maintain and integrate as many children as possible in the programme on their own and without outside help. Parent solidarity, contributions from church or the private sector, volunteering … through these mechanisms, the schools we worked with in Uganda and Ethiopia have shown strong will and resourcefulness to maintain the school milk programme. However, as already mentioned, even those with good intentions will reach a limit.

We therefore suggest a second form of intervention from donors and government, not to set up school feeding, but to complement with an investment safety net the existing parent-led model. We believe this approach can reach more children, as donors and government funding will be spent only on the most vulnerable and be more durable because they are not relying solely on donors/government funding cycles. We believe that in following the footsteps of community solidarity, this donor's support can be given in a way that does not undermine parents' contributions.

Netherlands East Africa Dairy Partnership

The Netherlands East African Dairy Partnership (NEADAP) offers a platform for exchange of knowledge and experience to tackle current challenges and leverage further development in East African dairy. NEADAP core partners are Agriterra, SNV, Solidaridad and Wageningen University & Research (WUR), each with their own knowledge, expertise, networks, local partners and projects in East Africa.

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