

## School Milk Feeding Programs in Kenya

# Impact and community motivation towards them

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# Abbreviations

<b>ECDE</b>	Early Childhood Development Education
<b>NKCC</b>	New Kenya Cooperative Creameries
<b>IDI</b>	In Depth Interview
<b>KSH</b>	Kenyan Shillings

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# Definitions

## **Convenience Sampling**

Convenience sampling is a type of non-probability sampling that involves the sample being drawn from that part of the population that is close to hand. There is no pattern whatsoever in acquiring these respondents—they may be recruited merely asking people who are easily available.

## **Boda**

A boda-boda, or “boda,” as it is more commonly referred to, is a type of motorcycle taxi.

## **Tuktuk**

The tuk-tuk (or "auto rickshaw" in some countries) is a sputtering, three-wheeled motorcycle taxi

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# Executive Summary

This report contains the results and analysis of research conducted across three Kenyan counties to examine the realized impacts of county financed school feeding programs.

We first set the context behind undertaking this particular research study, touching upon the set of challenges well documented in literature, explaining the motivation behind this study and the value addition of using a behavioral science approach. We then provide an overview of the research process including county and sample selection, as well as the research activities undertaken during this study.

We have arranged our findings into two main sections. First, we take a look at the current operations of existing school milk feeding programs, and highlight the key actors, the influential factors, and the problems faced at the grass root level. We then put forth the realized impact and benefits reported by primary care givers. Next, we dive into the levels of motivation of the key stakeholders in this end to end facilitation to understand the feasibility of a community led milk feeding program.

## **We find that;**

*(i) Motivation and ownership amongst ECDE heads and teachers and (ii) a stable consistent distribution network of transporters are the primary factors that decide the success of a county financed milk feeding program. The following enablers...*

The barriers are notably the concerns around the storage of milk at the ECDE centers, the inadequacy of the milk quantity supplied being able to cater to increasing enrollment rates, and teachers bearing the brunt of parent's frustrations arising from the irregular and inconsistent delivery schedule to schools.

In terms of realized impact, there are only positive reviews amongst primary caregivers regarding the health aspects as well as interest in attending school owing to the milk program.

As for the idea of a community led feeding program, the stakeholders are interested, the idea is reported to be feasible and half the sample notably agreed to pledge their respondent incentive towards a community contribution pool.





# Introduction

## Background of School Feeding Programs

School feeding is recognised as a way to improve children's nutrition and education and as a vehicle to fight disease. School feeding programmes throughout the world have successfully attracted children to school and have retained them by offering them food or a nourishing snack. Such programmes have indicated an increase in children's nutritional status, raised school enrolment, improved attendance, increased attention span and are solving community health problems. School feeding provides vital nutrients, and for many children the food they eat at school is the most nutritious they will get all day (IFPRI, 2004). The programs are also effective in stimulating demand for schooling, particularly in settings where school attendance is low and where children come from rural, relatively low socioeconomic backgrounds. These programmes appear to contribute to improved attendance and enrolment when there is a good collaboration between the feeding programme design and the environment in which the programme operates (Levinger, 2005).

School feeding programmes in Kenya, which have existed since the mid-1900s, have been proven to provide positive educational and nutritional outcomes for students benefiting from these programmes. School feeding in Kenya primarily operates in three ways:

- I. **Government supported programmes (at a national level):** The Ministry of Education runs school feeding programmes in public schools in mostly semi arid and arid regions. The government supports two kinds of programmes: Cash transfers and in-kind systems.
- II. **Private implementer supported programmes:** Many public schools, mostly in areas where there are no government programmes receive school feeding interventions through partnerships with private implementers like Food4Education, East African Children's Fund, Mary's meals.
- III. **Community supported programmes:** This includes internally managed school programs funded by parents or well wisher donations as part of their children's fees or community efforts where parents support schools with donations and cooking efforts. There are other school meal initiatives undertaken by communities and school authorities without the support of county or national government. These initiatives are not regular, taking place when there is a good harvest. The salient characteristics of these ad hoc school meal initiatives are as follows:
  - A. **Community Engagement:** Parents contribute money for school meals as part of the school fees per 3 month school term or with cash or food donations in kind (cooking and serving to help their understaffed teachers etc).
  - B. **Food Procurement:** School Meals Committees buy the food and make arrangements for cooking and serving to students. There is some support received from private and non-profit sectors. The menu is in most cases boiled maize and beans.
  - C. **Utilization of Funds:** Schools divert some of the money meant for school feeding of children for other purposes often resulting in inadequate or substandard meals from the finances left. However, parents consider school feeding to be more of a kind gesture from the schools as they believe that children receive from schools more than their households can provide.

Feeding programs as a whole, regardless of the donors or implementer, have historically faced a myriad of challenges. These challenges, presented in various formats, can easily be classified into direct and indirect challenges. Direct challenges can be identified as impediments that affect school feeding programs itself and are inclusive of lacking policies, low funding levels, infrastructural barriers, as well as low purchasing power of parents. Indirect challenges can be defined as factors that setback the feasibility and intentions of enabling sustainable school feeding programs and are inclusive of community resistance, discouraging agricultural conditions, data deficits and most recently, the impact of Covid-19 on the landscape.

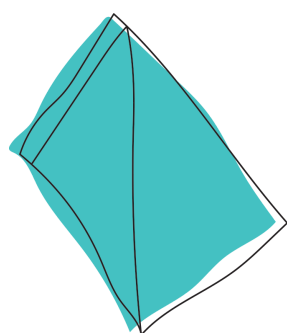
## Milk Feeding Concept

Kenya has a vibrant dairy industry that plays an important socio-economic role in the lives of many Kenyans ranging from farmers to processors, transporters and consumers. The first School milk programme in Kenya was started by the former president Daniel Arap Moi in 1979 and was fully funded by the government. It covered the whole country and provided milk to over 4.3 million pupils in 11,000 public primary schools 3 times a week for close to 19 years. (Kenya Dairy Board Conference, 2015). Kenya Co-operative Creameries (KCC), as a monopoly in milk processing and distribution, was contracted by the Government to process and pack milk for the program.

There were several great benefits realized in terms of (i) Guaranteed market for Kenyan milk, (ii) Expansion of KCC facilities, (iii) Increased attendance and improved health amongst pupils and finally (iv) Gave birth to a 'milk drinking' culture.

Simultaneously, the program also faced a multitude of challenges that finally led to shutdown. The overarching problems included (i) Unsustainable costs (ii) Lack of road infrastructure (iii) Losses due to spoiled product (iv) Incapacity to handle and store milk and finally (v) No accountability.

Since its shutdown, various stakeholders have time and again engaged with the concept of School Milk Feeding. The effects of the school meal program on the wellbeing of rural Kenyans cannot be overstated. Through providing daily meals, schools are able to meet immediate food needs, provide future safety nets, and offer long-term assistance and empowerment to children, families, and communities. (Stanford Journal of International Relations, 2011).



# 1,767

schools across  
five counties

In the present day, the **Kenya Dairy Board, local county governments, and local dairy processors** supported by **Tetra Pak** are currently implementing a school milk program in 1,767 schools across five counties.

*They aim to address malnutrition, increase school enrolment rates, and provide smallholder farmers with a guaranteed market for milk.*

The milk is sourced from smallholder farmers, with Meru Dairy, New Kenya Cooperative creameries (NKCC), Githunguri Dairy, and Brookside Dairy supplying milk to schools.

## A Behavioral Lens

Behavior science tries to understand why people do what they do and often seeks to analyze human behavior as it relates to society. Understanding the mechanisms at play, the community we operate in, our own sets of skills and abilities, combined with the heuristics and biases that we harbor, behavioral science explores the cognitive processes, especially decision making and communication, through systematic analysis of human behavior.

As discussed above, school feeding programs in general, have to face challenges such as continued financing, poor infrastructure, harsh climatic conditions, local procurement and maintaining community involvement. Challenges such as financing and community involvement, are an interesting space to apply a behavioral analysis to. As individuals, we would consider consistently contributing time and money to an initiative if it met certain criterias.

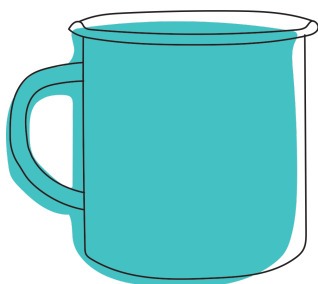
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**For example,** (i) It adds value (direct impact such as the health of a child), (ii) Endowment effect (engaged in an effort if a child is benefitting at a school).

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Of course, we may have all the right intentions and yet fail to take action, popularly known as the Intention - Action gap. But in this case, given the landscape of milk feeding, there has not been adequate research about the 'intention' part in itself.

Traditional programming methods are very focused upon capacity building, procuring finances, facilitating a logistical set up. While these are definitely crucial to any program success, they cannot be standalone. The individuals interacting with these programs, the ones who form the 'beneficiaries and recipients', indeed have a role to play that can define the success of a program. Thus, via a behavioral approach, we are looking to understand the 'willingness' and the 'motivation' to take those actions.



Any feeding program that relies on funding outside of the immediate community is likely going to be **impacted by funding challenges** sooner or later.

*Thus, it is essential to capture the level of awareness and intention within communities to support and execute a 'people driven' effort.*

This in no way disregards the other very visible structural challenges that exist in this set up or attempts to attribute the lack of success to a cognitive bias. We have provided a detailed overview of the challenges that previous school feeding programs have faced further in this report. The summary of each of the program's characteristics and challenges has been included in the Annex 1. Additionally, an itemized list of documented challenges is included in Annex 2.

The goal of our research project has thus been around **building an understanding of community willingness, perceptions and attitudes towards the school milk programs**. We specifically focused upon two types of counties, ones with an ongoing program and ones without a functional program.

## The Research Study

This project is focused upon researching insights around the potential of specifically **school milk programmes**. There is substantial documented research on the impact of school feeding programs on enrollment outcomes. But given that the literature also documents challenges that have plagued school feeding programs, our agenda for this study has been two fold. Firstly, we want to understand the factors (levers and barriers) crucial to facilitating a successful milk feeding program. Under this objective, we are also interested in looking at the impact on educational, health and gender specific outcomes. We explored this further by checking the levels of awareness amongst

primary caregivers. Secondly, we want to get a sense of the levels of motivation amongst stakeholders to contribute and support a community led effort towards local milk feeding initiatives.

The Global Dairy Platform (GDP), in partnership with the US Dairy Export Council (USDEC) and Food and Agriculture Organization (FAO), are currently conducting evaluations in various countries to understand the impact of school milk programmes on [nutritional](#), [educational](#), and [gender](#) outcomes. This is in accordance with providing guidance and tools to measure the contribution of dairy to the UN Agenda (Sustainable Development Goals - SDGs). The Busara Centre for Behavioural Economics has led the Kenyan arm of this research and generated evidence around the [levers](#) and [barriers](#) that affect the uptake of school milk programmes in Kenya.

In this research project, we have surveyed two types of communities. One, with an active feeding program, and one without an active feeding program. This allows for a point of comparison, and enables insights to inform on scalability to similar communities. It allows us to capture their willingness towards a community led model and exploit differences between the two communities in their levels of motivation. Additionally, it gives us the chance to uncover perceived barriers and possible bottlenecks in this hypothesized set up.

Along with administering surveys focused upon the county financed milk feeding programs, we also included a prototype via a storyboard that depicts a local community driven initiative to facilitate milk feeding programs in local schools. Introducing an intervention of sorts in the survey allows for more exploratory data collection and is leveraged on a visual tool that is more understandable and consumable by the respondent. This 'lab in the field' set up has allowed us to uncover attitudes and knowledge gaps further amongst the sampled population.



*Image by Freepik*

# Research Overview

## Study Aims and Objectives

We conducted qualitative research in three Kenyan counties (one without an active feeding program, and two with active programs) to better understand and explore the perceptions, attitudes and local context that influences and drives the implementation of the milk feeding programs.

**Specifically, the aim of the study was in two folds:**

- I. to explore the structural, social, and behavioral factors crucial to the success of the county led milk feeding programs. i. In counties that have experienced success in milk feeding program, the aim is also : to examine the impact of the school feeding program on primary caregivers
- II. to understand the knowledge, attitude, and willingness amongst stakeholders to support a community driven effort in the future

## Methodology

### County Scoping

In conjunction with the list provided by the Kenya Dairy Board, we commenced our process of county identification and selection. Beyond Nairobi and Bomet the research study was not successful in identifying active milk programs in other parts of the country as indicated by Kenya Dairy Board.

After dedicating resources to concretely ground truthing, we found presently ongoing programs in only two counties, namely; Nairobi and Bomet.

In order to have a comparison county to check for differences in attitudes and willingness, we decided to also include a third county that is not presently facilitating a county financed milk program, Nyandarua.

### Sampling

The research study sampling and respondent identification strategy leveraged on desk research and consultation with officers from the department of education, the Nairobi County livestock officers and local ward officers in charge of the milk distribution. Participants were recruited through convenience sampling with the help of local county officers in charge of education and agriculture.

**Ideally, we had been hoping to sample across three different types of counties:** (i) Recently commenced program (ii) Ongoing program, and (iii) No program, to try to understand the

differences in motivation and willingness amongst ECDE parents in counties where they can see a tangible effect of the program and in the ones where there isn't any visible impact at the moment.

## Research Activity

The research was conducted in two phases of activities, qualitative and quantitative. The qualitative phase was meant to understand the operations and the challenges of milk programs as a whole, while the quantitative phase complemented the qualitative phase by asking respondents to rate various impact and hassle factors on a scale. The quantitative phase was designed to capture the realized impact on primary caregivers, as well as, check the willingness and perceptions amongst stakeholders to contribute and operate a community driven program.

## Study Population

Participants of the two research activities were selected to provide comprehensive information about the program rollout, comment on the environments that the stakeholders are operating in, how they interact with the influencers, and the enablers and barriers that intervene on both the demand and supply side.

## In-Depth Interviews

We conducted In depth Interviews (IDIs) with a sample of 36 respondents (an average of 12 per county). We posed open-ended questions, asking participants about their roles and responsibilities around the facilitation of the milk feeding program, their perceptions of the challenges that exist and ways to tackle them as well as, enablers and barriers according to them that contribute to the overall implementation of the program. We also asked questions on awareness and the realized impact amongst primary caregivers and their recommendations towards making the program functioning better.

These were conducted in english and we then transcribed all recordings for thematic analysis.

### Stakeholders interviewed:

- **Heads of ECDEs:** We spoke to the teachers in charge at the ECDEs who are involved in the pick up and the distribution of the milk amongst the ECDE children.
- **Local county officers:** Education officers at each of the respective counties are responsible for coordinating the program within schools in their counties.
- **Representatives of Processors:** An officer at each of the partner processors were interviewed to understand the supply side perspectives.

## Quantitative Surveys

We conducted 120 quantitative surveys with various individual stakeholders across the three counties to uncover the impact of the milk feeding programs that has been realized by the target population, as well as their nutrition and weekly purchase decisions in light of the feeding program. We also wanted to exploit the level of awareness amongst these stakeholders to capture their willingness towards a community led effort.

Each survey took approximately 20 minutes to administer per individual. Field officers administered the survey by going door-to-door within a given community, reading the survey aloud in Kiswahili using close-ended, yes-or-no, and multiple choice questions, and recording responses using a tablet connected to SurveyCTO.

**The following stakeholders were administered quantitative surveys:**

- **Female caregivers:** We administered surveys to capture the level of awareness and impact amongst mothers of children currently in ECDE.
- **Dairy farmers:** Local livestock farmers, who are a part of registered cooperatives were sourced from the county livestock officers. We captured their attitudes towards the various sales channels available for their milk.
- **Transport personnel:** We interviewed riders/drivers who are responsible for the delivery on the various delivery routes to the schools benefiting from the program.
- **Distributors:** We also spoke to distributors, the ones appointed via the county government to supervise the logistics and the distribution of the milk to the schools.

### Study Materials

To capture perceptions and attitudes towards a community-led effort, we piloted the idea via a storyboard to elicit responses by introducing a prototype in the survey. The storyboard depicts a community facilitated milk feeding program.

This enabled us to capture willingness, feasibility, and potential bottlenecks of a hypothetical community-led setup, within the quantitative survey. The frames of the storyboard have been included in the Annex 3. Along with the mechanism based questions around the prototype, we also included a hypothetical question around contributing to a pilot program, based on the storyboard.

## Data Analysis

### Qualitative Content Analysis

We analyzed the qualitative data from the IDIs using thematic content analysis, examining patterns within data. Interview transcripts were “stripped” and organized systematically by question and response. We then coded answers to establish concepts, examples, and themes relevant to form initial insights.

### Quantitative Analysis

**We analyzed the quantitative data to determine the:**

- I. Impact understood amongst mothers with respect to effects on health, education,
- II. Perceptions of the average primary caregiver about the continuation of the milk feeding effort,
- III. Their likelihood of taking up and willingness to contribute time, effort, money,
- IV. Perceived feasibility and potential challenges as reported by dairy farmers and transport middlemen.





# Findings

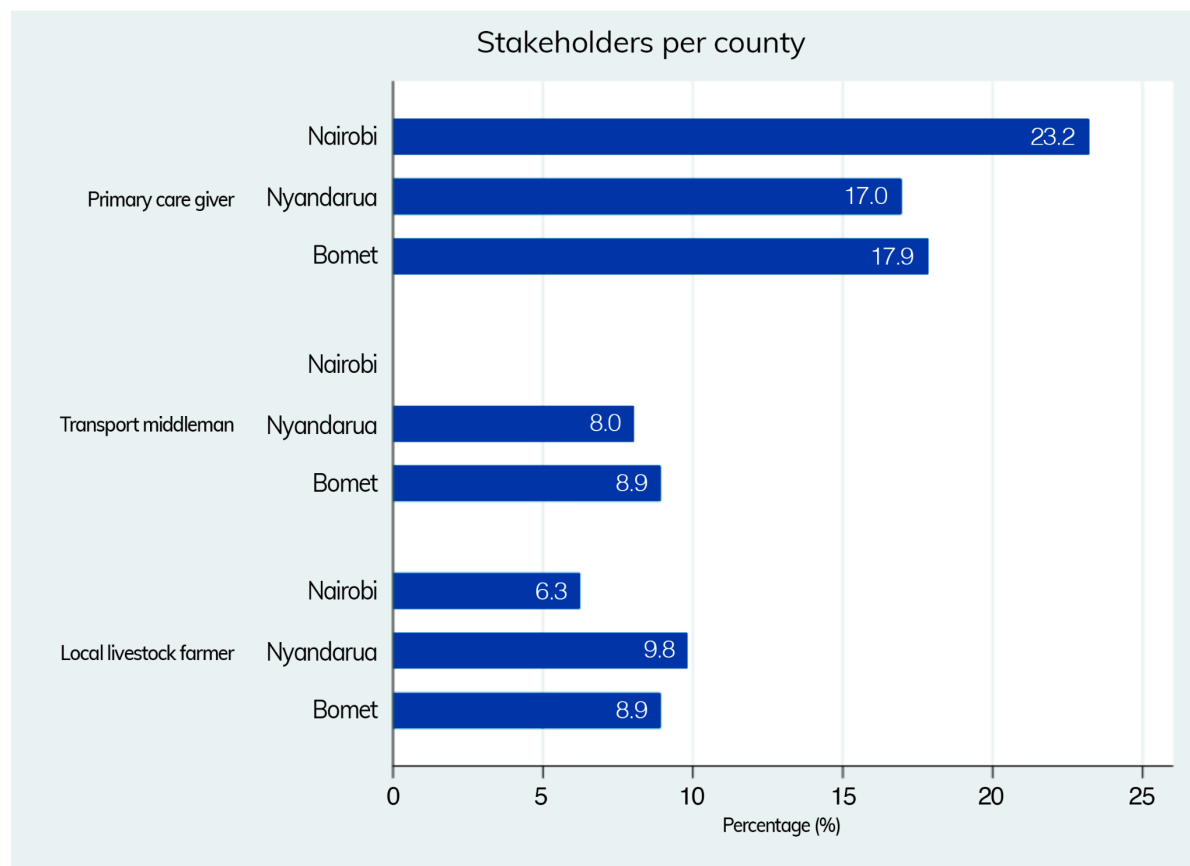
Below is an overview of the sample, the ownership of dairy cattle, and the milk purchase patterns currently practiced by stakeholders.

## Quantitative Sample Overview

A total of 120 respondents were interviewed, 65 being primary caregivers, 19 transport middlemen, 8 distributors, and 28 local livestock farmers. Amongst the total sample, 33% reported having completed high school education.

- Among the 65 primary caregivers, the average number of school going children was 2 among the households, and an average of 1 child currently enrolled at an ECDE center.

**Figure 1.** Overview of stakeholders administered quantitative surveys



- In terms of cattle ownership amongst the primary caregivers surveyed, three in Nairobi county, two in Nyandarua county, and sixteen in Bomet county own dairy cattle in their household.
  - Bomet being a leading dairy county, this explains it having the highest number of primary caregivers that own dairy cattle. Correspondingly, Bomet has the highest mean of milk produced among primary caregivers as seen in table 1.

**Table 1.** Summary of milk produced by the primary caregivers

Milk production by primary caregivers owning cattle: per week (in liters)	Nairobi county	Nyandarua county	Bomet county
Average	2.7	7	20.8
Min	1	0	2
Max	6	14	70

- Forty eight primary caregivers reported that they purchase milk to consume in their households with on average 18% of the weekly expenditure going towards milk purchase.
  - For the remainder of seventeen that do not purchase milk, only three reported price being a barrier. The rest (fourteen) reported having another source of milk, basically their own cattle in the households.
- In only about 13 households, the milk is primarily considered for children's consumption.
  - Half of these households report that the milk is sufficient for the children, the other half, not as much. Besides milk, alternative sources of protein for children reported include : Legumes e.g beans, Red and white meat, Eggs, Fish (including omena), Vegetables, meat based soups.

## Insights Regarding Ongoing Programs

Presented below are the factors contributing to the present programs around various touchpoints.

### Rollout of the Program

Consistent financial support from the county government and the presence of a strong local dairy processor with ties to a responsible distribution network are the bare minimum criterias that ensure a timely and regular supply of milk cartons to ECDE centers.

#### Rollout of a milk feeding program has two key components;

- I. The county government dedicates funds to provide for milk packets at a set frequency and;
- II. A partnership with a local dairy processor.

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*Counties like Bomet are able to position themselves as a dairy county due to the **quality and quantity of milk produced.***

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The local dairy processor delivers milk packets, in cartons to ward officers. These officers are then responsible for coordinating with a distributor or transport personnel directly (like a boda rider) to deliver milk to schools. Each route has a fixed set of schools. Generally, each school is scheduled to receive milk twice a week. We also found that not all schools receive a door step delivery. There doesn't seem to be a standard pattern of deliveries.

There are cases of schools in Nairobi where teachers at ECDE are left to arrange and pay for the pick of the milk cartons from a central point, on their own accord. Some motivated group of teachers manage to facilitate this pickup by themselves, via their own budget.

## Beneficiaries

While school feeding programs in the past, and some even presently, are offered to children across grades, the milk feeding specifically is only meant for kindergarten children enrolled at government ECDE centers.

The county supported milk feeding program is designed to target children enrolled in Early Childhood Development Education (ECDE) centers. The current programs that we researched do not extend to the primary sections of the schools.

This insight informed the study where we had a respondent inclusion criteria for primary caregivers, to ensure that they currently do have a child enrolled in a ECDE center.

## Milk Program Statistics

There are different delivery frequencies in different counties. At the time of the surveys, schools in Nairobi had not received milk since the beginning of the year 2023. Whereas, all respondents in Bomet reported regular milk deliveries, normally twice a week, for their children enrolled at the ECDE centers.

All the twenty respondents that reported their children currently receive milk at ECDE centers, reside in Bomet county.

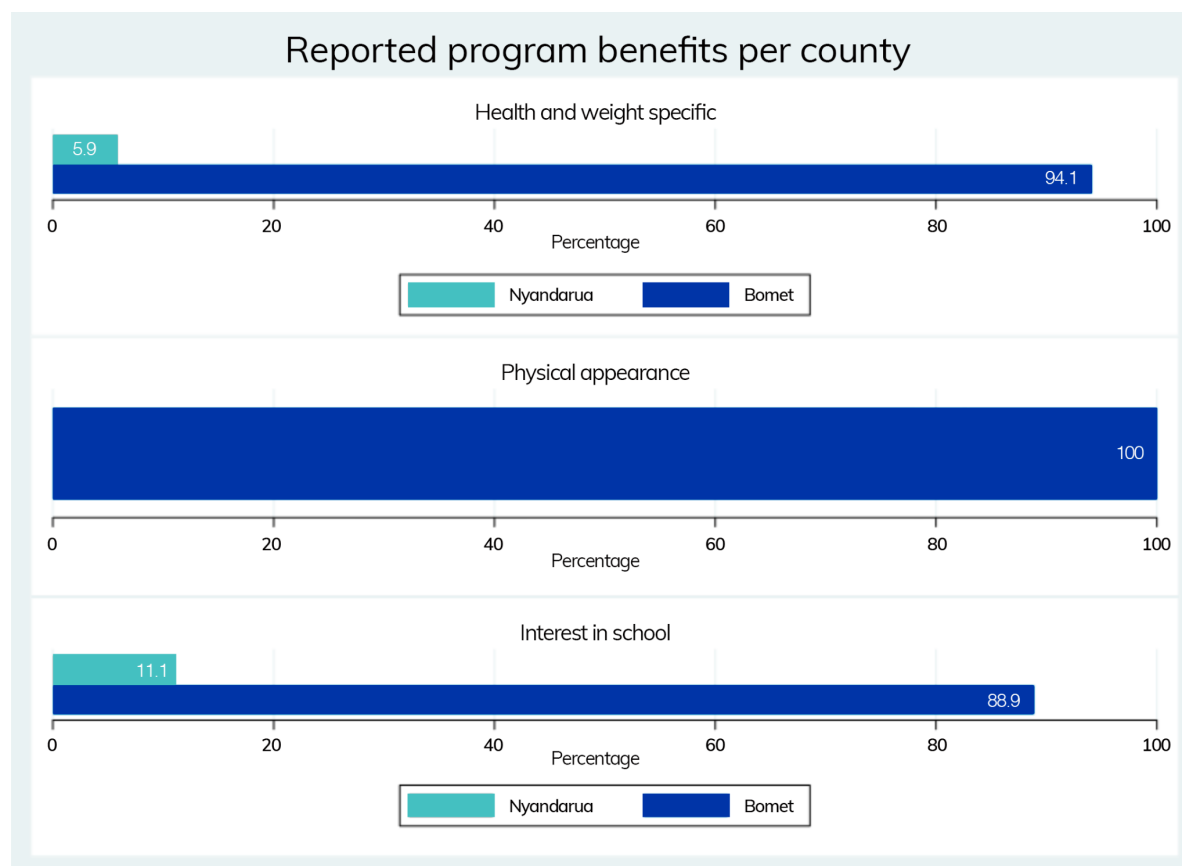
**Nairobi specific insight:** None of the 24 primary caregivers from Nairobi county reported their children having received milk at the ECDE in the last month preceding the interview. This is owing to the inconsistent delivery schedules on the Nairobi school routes. We explore this insight further in the report.

**Bomet specific insight:** In terms of frequency, the majority among the Bomet primary caregivers (85.7%) reported two times a week, one primary caregiver reported their child receiving milk three times a week while one of the Bomet respondents reported receiving milk once a week. We sense that this difference depends on the school routes.

## Perceptions amongst Primary Caregivers

The mothers that were interviewed report to have observed very clear, visible changes in the health and aesthetic aspects of their children. Some even claim to have children being more willing to attend school. Additionally, more than half the sample agreed that the milk feeding in school had freed up resources for other household purchases, as well as allowed them to refocus some of their time on matters other than child nutrition.

**Figure 2.** Reported health and education specific benefits



Out of 21 respondents who reported that the ECDE schools offer milk, 17 reported health and weight specific benefits, 9 from Bomet reported changes in the physical appearance of their children, and another group of 9 reported that their children had increased interest in school. (Respondents from Nairobi county are not included in the benefits as they all reported that their ECDE going children were not currently receiving milk.)



*It was a success because the children were happy about it and even other students who were in private school transferred and came to our school. The students never used to stay home for long because they remembered they were coming to drink milk in school and at home there was no milk. Also their health had improved, their health was good.*

**ECDE Head, Nyandarua County**

On the perception of the milk program contributing to a better/additional nutrition access, out of 55 primary caregivers, the highest percentage (36.4) agreed that the **milk program has/will lead to them needing less dairy nutrition at home/eating less at home.**

For the perception of money, the highest percentage (47.3%) strongly agreed that the milk program has/will **free(d) up money for other domestic purchases apart from milk**. In terms of time, 45.5% of the primary caregivers strongly agreed that the **milk program saves them/will save them time needed to purchase and prepare the milk/other food for them**.

Only one primary caregiver agreed that she/he sends their child to school primarily for milk with 89.1% strongly disagreeing. None of the 55 primary caregivers opined that they would stop their children to school on all days of the week, were the program to stop in the future. 81.8% strongly disagreed with the statement. We believe that this question is strongly influenced by the **Hawthorne effect, leading to socially desirable answers**. In the qualitative analysis further, we explore the ECDE teacher's responses around attendance sharply increasing on the days when the milk is expected to be delivered.

In terms of value addition of the milk program beyond just their child, ten respondents reported that their children are allowed to bring milk home, and amongst them, eight respondents said that their children actually bring milk home. This allows them to distribute the milk with the child's siblings as well. Out of the remaining fifty five caregivers that reported that their children are not allowed to bring milk home, the majority of them said that they would want their children to be able to bring the milk home. We explore this insight further around the reasons for school teachers not allowing milk to be taken home.

## Enablers and Barriers along the various touchpoints of the milk feeding program

### Organization at the County Level

#### Upward feedback to county officials



*I gather statistics of the learners from my ward. I forward to the sub-county, I receive milk for my ward from KCC then I distribute the milk to schools using five bodaboda transporters.*

**Ward Coordination Officer, Nairobi**

The county officials are responsible for overseeing the whole program. They get the number of students enrolled in the schools and organize for the amount of milk needed in each. They coordinate with mostly Boda Boda operators to transport and deliver the milk. In most cases, the county officials have to deliver the milk on the same day to all the centers due to lack of enough storage in their offices. Availability of storage spaces in schools is a structural enabler of the program.



*During flagships we could go there and be part of the flagship and later they would call us to inform us when the milk was to come.*

**ECDE Head, Nyandarua**

*Security, storage and you don't need freezers because the milk is long-life. That one is enough.*

**ECDE Head, Nairobi**

A main enabler crucial to rollout was reported by majority of the respondents was good communication that trickled down from the milk distributors, to the delivery people, and then to the ECDE heads around the same geographical area. The roads leading to the schools play an important factor in facilitating this.

#### **Program inconsistencies and inadequate quantities for schools**

The main challenge reported by more than 50% of the respondents was the lack of consistency with the program. The program is often halted with no explanation or communication to the ECDE heads. This leads to drop outs especially by students who had joined the school primarily due to the milk program offered there.

Subsequently, the milk that is supplied when the programme is on going is often not sufficient for the students. Over time, the enrollment of students spikes due to the programme in place but unfortunately the amount and quantities of milk supplied remains the same. This is aggravated by the milk spoilage that occurs due to poor transportation, lack of proper storage as well as close expiration dates for the milk supplied. In one case that quite stood out, an ECDE head reported that milk was stolen from their school. This puts an extra burden on the school, of hiring a watchman to keep guard and ensure the milk is not stolen.

#### **Change of government and disbursement of funds have been major challenges**



*The milk is not frequently supplied as the milk is supposed to be taken daily but at times we only take once or twice a term.*

**ECDE Head, Bomet**

*It has not ended, as per the governor he's improving it is improving his lifting up from milk to porridge, which is more solid and I believe it is more solid.*

**County Officer, Nyandarua**

The major frustration by the ECDE heads and even parents has been the inconsistencies in the programs. This has worsened with the elections and the change of government that some of the counties are undertaking and the program has come to a halt with no communication of when it will take off again.

This has had a ripple effect on the school attendance among students with the number of absenteeism rising in most of the schools that were implementing the program.

It was interesting to note that in Nyandarua, a county officer reported plans by the county government to replace the milk program with a porridge one. This can be tied to reports that the milk program has been an expensive venture for the county government and efforts to get donors who can support the program have been futile.



*That is, the inconsistency in the number of children is getting higher. So, when we forward the statistics, the milk is brought but when they come the number has increased.*

**County Officer, Bomet**

In addition to the change of government, the slow disbursement of funds by the national government has been another cause for the program inconsistencies. Without the funds, the county government has no way of facilitating the milk delivery.

There were also often spikes in the number of children enrolled in the schools due to the milk program. This was reported as an issue that the county government had to cope with and it would consequently lead to the amount supplied being insufficient for the students, as was also reported by most of the ECDE center heads.

## Transportation of Milk to Schools

### **Boda Boda operators are crucial stakeholders as well, but there is a severe staff crunch**

Apart from the ECDE heads and county government officials, Boda Boda operators have been crucial to the success of the program. They ease the delivery of the milk to the school in cases where the ECDE heads have to get the milk from one central delivery area. In some cases, tuk-tuks are also used in this delivery. All of the transporters interviewed that had been involved in the delivery of milk also agreed that the milk is of good quality.

Teachers in the school help in distributing the milk to students and one ECDE head reported that in instances where the parents contribute money for food, the money can be used to chip in milk delivery.



*From here to Kinyanjui road is a distance so I have to source my own if the school does not have a van that we can use to*



*carry milk so I have to go and source my own means to go and carry it.*

**ECDE Head, Nairobi**

*There was a time when the milk was being delivered, it used to burst the first time.*

**County Officer, Bomet**

*Like in Chesoen ward we have 42 centers and the issue of most wards not having offices, so the milk that arrives today should leave my office the following day.*

**Ward Coordination Officer, Bomet**

The challenge of transportation and ensuring the delivery of the milk to the school is an issue that the different stakeholders are grappling with. Some of the challenges that the county officials experienced were impassable roads especially during the rainy season, inadequate staffing and funding for the transportation logistics such as unloading the milk, and poor handling of the milk leading to busted cartoons and packets.

For the ECDE heads, the greatest challenge was ensuring that the milk reaches the schools. In Bomet for example, in addition to impassable roads due to rain, the distances to the different schools are quite expansive and the milk was delivered at one central center for the ECDE heads to pick and deliver to their respective schools. The milk was also often delivered later in the evening and this prompted the need for watchmen in the schools to guarantee safety.

One official from Bomet reported delivering milk to 42 different centers on the same day. This can lead to delays in delivery, explaining the reports by the ECDE heads that sometimes the milk is delivered later in the evening and they have to wait for it. While transporters being available to deliver is an enabler, the scarcity of these riders is definitely a barrier. Some stronger coordination efforts are required in this case.

The ECDE heads report having to organize themselves and using any petty cash at their disposal or at times sourcing the funds themselves to cover transportation. This is similar to one of the ways the county officials have devised to ensure there is enough help when it comes to offloading the milk and mitigating the challenges that arise during the process.

#### **There are discrepancies in the milk distribution and delivery**



*We give them twice or thrice weekly. This week they drank it thrice because I said to myself, 'since it is available, let them drink' this week they drank it thrice.*

**ECDE Head, Nairobi**

*Depends on the arrangement you have with the school; we have schools that have space and proper storage they can stock for the term, others who can do for a month, there are those who do every week.*

**Processor, Nairobi**

The county officer dispatches the milk, with forms that are supposed to be signed by the ECDE heads receiving the milk. The forms should be returned to the county officer, to ensure that the amount dispatched is the amount received.

The milk delivery and distribution is yet to be straightened out as reported by most of the respondents. The delivery day and amount for instance, is often dependent on the capacity of the school to store the milk and the number of students currently enrolled.

Also, the ECDE heads often have to take it upon themselves to organize on how the milk will be delivered to the school. Proper storage has been a challenge for ECDE centers. The center heads reported using classes, offices and in one case the library due to lack of proper storage.

## **Storage of Milk and Safekeeping at Schools - Presence of Heating Facilities**

One of the main enablers of the program that was reported was the availability of storage spaces for the milk delivered. For the schools that did not have storage facilities at the start of the program, efforts were made to ensure that this was available. This reduced the amount of milk spoilages experienced.



*Also, there was an issue where some of the primary teachers wanted to drink the milk.*

**County Officer, Bomet**

*Also, this milk is meant for ECDE learners, but in some schools, their head teachers wanted to give it to the grade one and grade two.*

**County Officer, Bomet**

The milk safekeeping has been a way to also mitigate the challenge of some teachers taking the milk for their own consumption and others giving the milk to the upper grades when the milk was meant for the ECDE students only. One ECDE head reported making enemies among the teaching staff because of failing to share the milk with them.

Another influencing factor is the safekeeping of the milk within the school premises itself. One of the ECDE heads reported that the other primary school students may end up consuming the milk for themselves if it is not monitored.



*A barrier would be storage, because there is a time it was stolen and we did not know who stole.*

**ECDE Head, Nyandarua**

*We receive it and then we stay for a long period of time without it. For now, we only got the delivery last week, and it was the first time this year.*

**ECDE Head, Nairobi**

Proper storage facilities are a game changer and definitely a factor that can be considered as bare minimum infrastructure from the point of view of the schools that can contribute to the success of the program.

There is a gap in the facilitation or provision of storage infrastructure for the milk. More than 90% of the ECDE heads reported that there were challenges with where the milk would be stored. They have used spaces such as the library, headteacher's or ECDE head's office to keep the milk and ensure it is secure.



*The stealing challenge we decided to change the storage we moved to the head teacher's office we kept there. When it is cold, we could take the milk to the cook. He dips the milk into water to warm it a little, on expiry we were being forced to give all the milk to avoid it going bad.*

**ECDE Head, Nyandarua**

*They had to do collaboration, the three schools. They looked for a vehicle to bring the milk into the school.*

**ECDE Head, Nairobi**

The ECDE heads and the schools take it upon themselves to deal with the challenges they face. The ECDE heads find means to cover the extra costs they incur to ensure the milk gets delivered to their schools. Storage has been another major challenge that they face and they have set up storage facilities and created spaces within the schools to accommodate the milk they receive.

## **Distribution amongst Students and Sensitizing Parents**

**The role of ECDE heads is a game changer**



*I receive the milk, I make sure that the milk is well stored, make a schedule of the days that the milk will be taken and the shared milk is sufficient for the children for that day and there is no wastage.*

**ECDE Head, Nairobi**

*When the parents come for the children, I tell them that we have a milk program and sensitize them on the importance of buying milk for them even beyond school.*

**ECDE Head, Nairobi**

The ECDE heads play a pivotal role in the whole program. Their main responsibilities include organizing for the milk delivery, keeping records of the delivered milk, signing documents after delivery, ensuring the milk is stored safely, and also ensuring that the available milk is well distributed among the students. The ECDE heads also inform new parents about the program and the importance of milk in the student's diets.

They also act as a buffer between the parents and the county government. This is because they are often on the receiving end of the parents' and students' frustrations in cases where the program halts or the milk is insufficient. They mitigate the problems that arise within the program rollout and at times bear the extra responsibilities and burdens that arise during mitigation.



*I was taking the milk from the computer room, I bring it here, I give them once on Mondays and Wednesdays.*

**ECDE Head, Nyandarua**

*What happens after lunch is when we give the milk, especially when the weather is hot. When we have weather that is very cold, we don't give milk.*

**ECDE Head, Nairobi**

Another challenge that the schools have had to mitigate is the issue of the milk being too cold for the children to consume. In some of the schools, they warm it up for the students and in other instances, they give the milk during afternoon hours when the temperature is warmer. In cases where the milk is not enough, the ECDE head plans ahead with what is available to ensure that it is distributed equally among students.

The quantities given to each student varied with some reporting that each student received a 250 milliliter packet and others reported a 200 milliliter packet. The frequency at which the students receive the milk is also dependent on milk availability. Different ECDE heads reported giving the

students milk three days in a week and others two days in a week. The time of day mostly reported was after lunch, when it is not so cold. One ECDE head reported that they have to heat the milk for the students due to the cold.

Some students are allowed to carry the milk home when they are too full from the food they had during lunch, but the teachers have to insist that they should drink the milk and it should not be used to cook tea. Additionally, in some rare cases, children of higher grades are also known to steal the milk from the ECDE children during recess.

## Actual Impact after Delivery

### Increase in enrollment in the schools offering the program



*Like in our school, we used to be around 110/120 (students), but after the milk, the enrollment is at around 140. Also here at ACK (St Peters), they used to be 110/120, but now they are around 200 and something.*

**ECDE Head, Nyandarua**

*I have told you that the enrollment increased drastically. It is like it doubled.*

**ECDE Head, Nairobi**

Around 80% of the respondents reported that the program was a huge success and this could be backed up by the surges experienced in the enrollment of students by the schools that were offering the program. The number of students that dropped out also reduced during the times that the program was up and running.

However, for a few of the ECDE heads, they could not conclude that the program was a success because it had not been running for a long enough time. They needed to give it more time in order to make a conclusion. For one or two, the program was a failure due to inconsistencies and the challenges experienced in the roll out that were yet to be addressed.



*Sometimes the parents chip in to buy food for the children. From that, one may get money for the milk delivery.*

**ECDE Head, Nairobi**

*The first challenge was simple but hard, the learners had to wash their hands before taking milk, another challenge was to teach them how to use the straw.*

**ECDE Head, Nairobi**

As a last mile service the teachers provide a crucial service of showing the ECDE children how to drink the milk from the packet properly using a straw as most of them are not used to drinking packaged milk and can easily spill leading to wastage.

### Other food and nutrition education programs



*They decided that they will be paying KSH 30/ day for feeding. It is for lunch and porridge. Let us just say breakfast and lunch.*

**ECDE Head, Nairobi**

*I have heard that the governor, also with our Minister, that is the CEC , might be planning something like adding a porridge program in the near future.*

**County Officer, Bomet**

A complementary food program that has been implemented in some of the schools is the porridge program. The parents contribute money for the program. In Nairobi for instance, an ECDE head reported that parents contribute KSH 30 per day for lunch and porridge. In Nyandarua, an ECDE head reported that parents contribute KSH 1,000 for lunch and KSH 200 for porridge per month.

The shift from milk to nutrition filled porridge is to ensure sustainability of the program without the need to rely on support from donors or even parents.

Some county governments have plans to introduce food programs similar to the milk one. The most reported was porridge programs due to the nutritional benefits that students can receive from porridge. There are also nutrition education programs, mainly for county officials with the assumption that they will in turn educate parents.

## Intervention Areas

**The main feedback from the surveys has been around streamlining, a need for better organization, communication and cooperation**

The main areas that could be built on is the recognition of the head teachers for having willingly taken ownership, a better channel for communication the Distribution and Delivery, and finally, addressing the very real challenge around Storage.



*Nothing major just consistency, if you run it consistently there will be no gap but if you give us now and then you stop like it*

*was last time we will feel like there is something that has been denied to the children.*

**ECDE Head, Nairobi**

*I wish the county can organize how the milk can be dropped to the school instead of someone having to organize themselves on how to pick from the county.*

**ECDE Head, Nairobi**

The main recommendation offered by more than 80% of the respondents is to **streamline the program to run smoothly**. The main challenges experienced in the rollout need to be addressed. The relevant stakeholders need to ensure the program runs constantly without stopping, and in cases where the program halts, this needs to be communicated to the ECDE heads and other stakeholders involved.

Further recommendations were ensuring that the milk is delivered to each and every school, increasing the amount of milk given to every student as well as the frequency at which they receive milk i.e from two or three days in a week to everyday. Follow ups with ECDE heads to understand the challenges faced and tackle them swiftly

#### **The ECDE heads come up with measures to mitigate the challenges**



*It didn't increase much because we applied the birth certificate rule. It was strictly 4 years old. Now they started only admitting those of 4 years old only.*

**County Officer, Bomet**

*We assembled these bodaboda riders and talked to them. We told them the importance of this money staging for a long period and its coming in a lump sum and we agreed.*

**County Officer, Nairobi**

The ECDE heads have put up measures to curb the spikes in the number of students admitted to the centers, especially after the program was introduced. One of the ways has been talking to the parents and ensuring that the students move to grade 1 once they have outgrown ECDE. An interesting measure has also been ensuring that only children who have attained the age of 4 years are admitted to ECDE and they have the birth certificates for proof.

For the delay in payments, the county officials negotiated with the Boda Boda operators and they would come to an understanding. For the impassable roads, in Bomet for instance, a county official reported that they liaise with the county government to do some repairs and in Nyandarua, a

county official reported that they send tractors to transport and deliver the milk during the rainy season.



*Image by Freepik*

# Interest in Community Led Programs across the Sample

The section below outlines the feedback specific to the idea of a community led milk feeding program and dives into insights around the responses we received.

## **Involvement in a Community Led Program**

Actors across the milk feeding program were reported for their willingness to participate in a milk program. The program would help greatly in providing a market for the dairy farmers, however a potential challenge would be getting them to agree on the frequency of payments.



The main requirement highlighted was the requirement for primary caregivers to be educated in facets touching on operations and benefits of the program, touching on trust building. Relatedly, the main challenge highlighted was financial buy in from caregivers and frequency as well as the source of payments to dairy farmers. Some report that they would be willing to be paid monthly, others weekly or daily.



*We have to tell these parents then we enquire from them we hear their views then maybe we can give the importance of this one.*

**ECDE Head, Bomet**

*There is an issue of payment as you are saying here. It is not easy for parents to remove money.*

**County Officer, Bomet**

The opinions of the respondents on the storyboard were that it would be a good program if implemented. However, the parents need to be educated on it, the actual operations and its benefits, if not they may be reluctant to contribute the money needed.

Precedent that we could showcase and learn from is that, it is interesting to note that one county official reported that there was once a porridge feeding program where parents bought maize, made flour from it and the flour was used to make porridge for the children. It unfortunately halted due to the parents failing to buy the maize among other challenges.

## Transporters

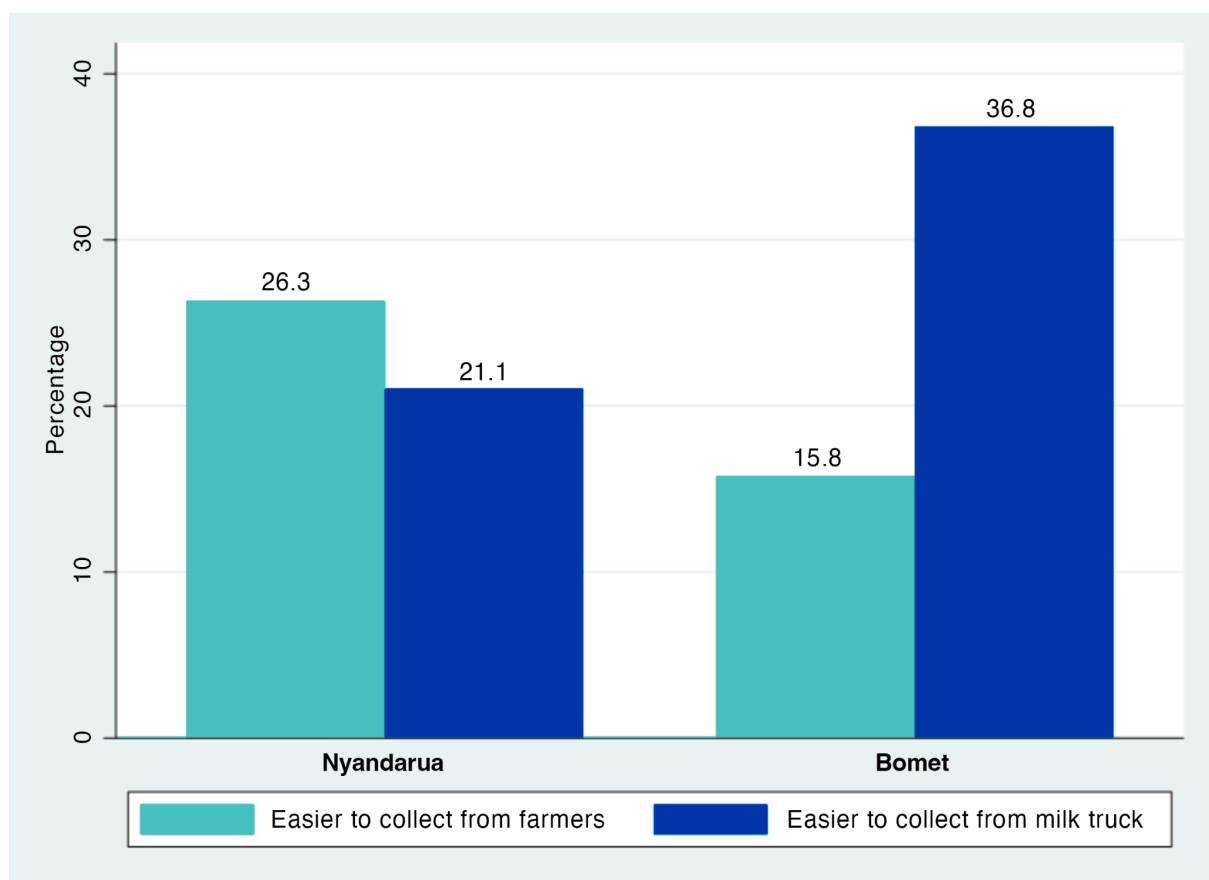
Almost 80% of the transporter sample found it feasible and around 60% of the respondents were very strongly interested in being part of a community led program. Moreover, with regard to letting go of their respondent incentive and contributing that share to a pilot program, we see strong correlation between the respondents who agree to pledge and them having a child currently enrolled in a ECDE center.

We collected insights from two kinds of transporters, the ones who have been recruited specifically by ward officers in Bomet for milk deliveries, as well as transporters who generally work as a supply link between dairy farmers and other local processors. On average, the transporters of interest to this research have been delivering milk for an average of 7 months at the time of the survey. In their opinion, they find the milk they are delivering to be of good quality. We find differences, specific to counties, around the ease of collecting milk from milk trucks versus from local dairy farmers.

Of the 19 transport middlemen interviewed, 9 were from Nyandarua county, who work as transporters for dairy value chains, and 10 from Bomet county who are actively involved in the milk feeding program that is currently ongoing in addition to their regular transport services.

- The 10 respondents from Bomet county were asked the number of months they have been delivering milk to schools. The maximum was 12 months and the minimum was 2. They also reported that they perceive the milk to be of good quality.
- Per week, the transport middlemen reported making a mean income of KSH 1,120, with the reported maximum being KSH 1,600 and the minimum being KSH 800. 80% of transporters reported being somewhat satisfied with their pay.
- In terms of the convenience of getting the milk from producers or distributors, out of all the 19 transport middlemen, 15 found it to be mostly easy and only four found it to be cumbersome, but the cumbersome nature is attributed more to the lack of communication and regularity of procurement than the actual task of collecting milk.
- When asked about the ease of delivering the milk to the schools, the sample had a mixed opinion. Six found it to be not at all easy, whereas twelve transporters found it somewhat easy or very easy. Among the transport middlemen that found it not at all easy, four were from Bomet county and two were from Nyandarua county. The county of Nyandarua currently does not have a milk program, and the respondents are thus reporting a recall measure.
  - On the ease of collecting the milk, in Bomet, the majority (36.8%) reported that it is easier to collect milk from a milk truck and distribute to schools.
  - However, in Nyandarua, the majority (26.3% of the total sample of transporters) reported that it is easier to collect milk from the farmers and bring it to a cooperative. Intuitively, this is of course owing to the fact that Nyandarua does not have an ongoing program, and the transporters interviewed have not supplied to schools in many months.
- All the nine transporters from Nyandarua county also collect milk from local livestock farmers for other dairy cooperatives. Only one transporter from Bomet reported collecting milk from local livestock farmers. This is interesting to note because in a county like Bomet, most dairy farmers double up as transporters themselves or rely on a family member to facilitate the delivery of milk.

**Figure 3.** Ease of milk pick up - Cooperative linked farmers vs Milk trucks for schools



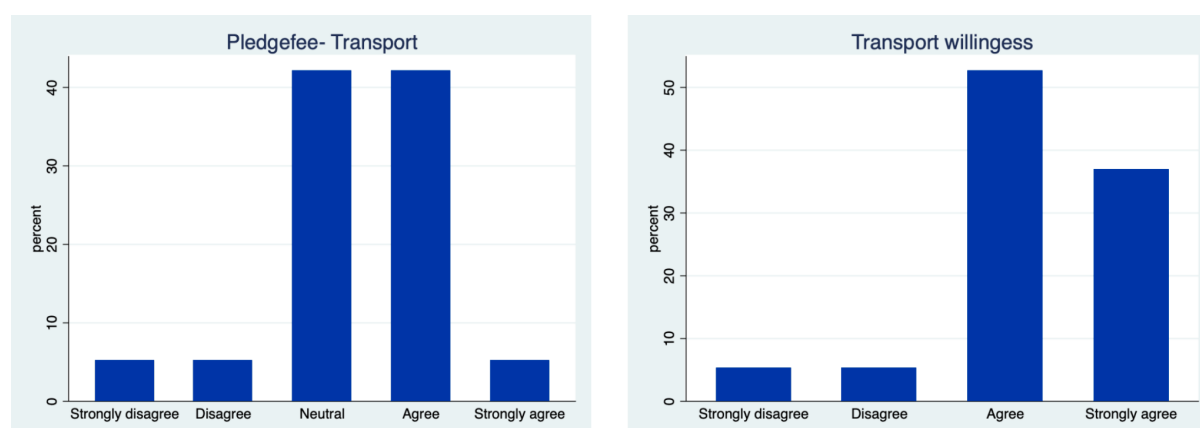
#### Feasibility according to transporters

The transporters that were interviewed, generally agreed that the community led program would be feasible where 47.37% agreed and 36.84% strongly agreed.

Apart from the majority finding it feasible, 52.63% are also willing to transport, with 36.84% strongly agreeing on willingness to be a part of the community-led effort.

When it came to willingness to give up a part of their incentive, half of the sample was in agreement of letting go of their incentive. This is very understandably correlated with those who currently have children enrolled in an ECDE center, regardless of whether there is presently an ongoing program or not.

**Figure.** Willingness to let go of some of the respondent incentive as a pledge to their participation vs willingness to be part of this community led effort



## Dairy Farmers

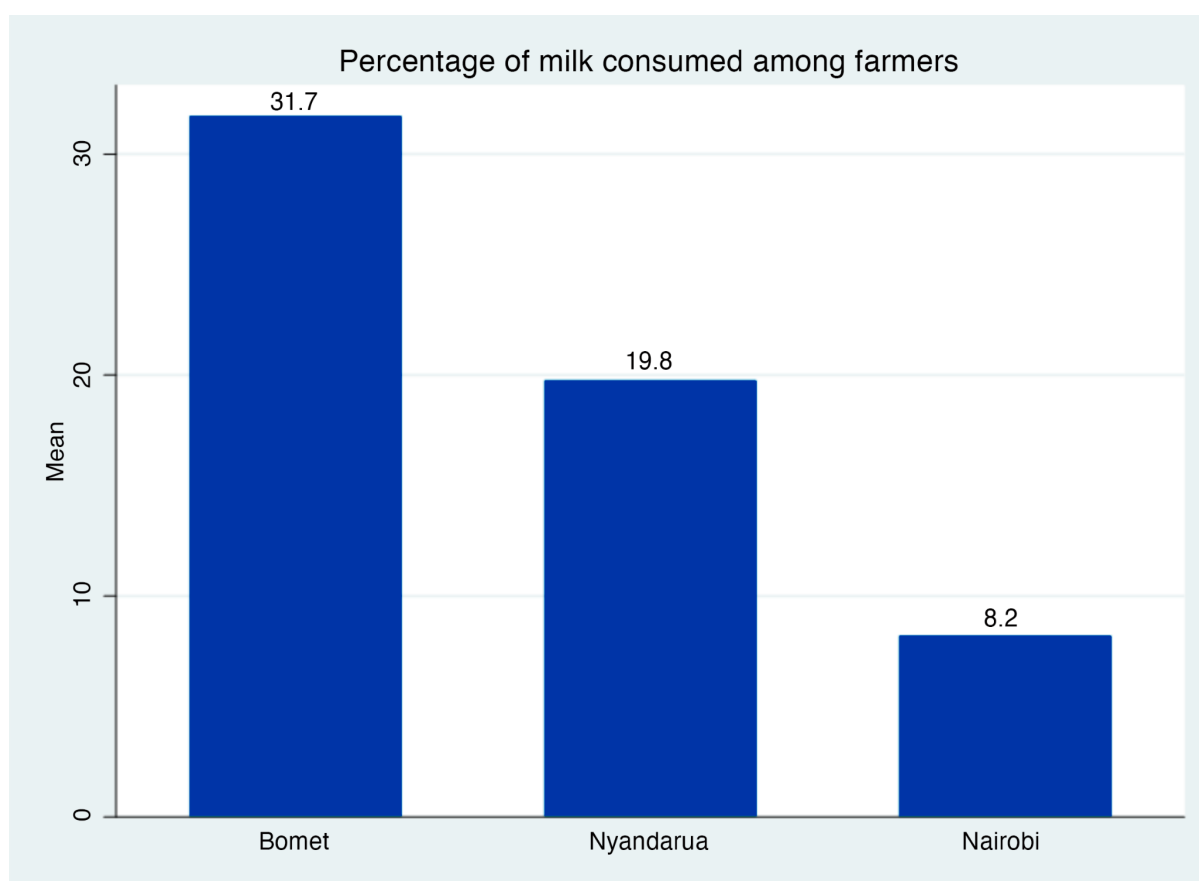
Interest among the farmers is positive with the majority of the farmers willing to be part of the program and willing to be part of a pilot. This is despite the fact that none of the dairy farmers had engaged in such a program before and only 1 had heard of a similar program before.

We surveyed seven dairy farmers in Nairobi county, eleven in Nyandarua and ten in Bomet.

- Bomet has the highest percentage of milk consumed at home against the milk produced at 31.7%, followed by Nyandarua county at 19.8%, and Nairobi county at 8.2%. The rest is for sales. The average consumption across the 3 counties is 16.6 liters with a minimum of zero and a maximum of 35 liters. This context about the production amongst dairy farmers is useful to make sense of their responses on the questions around willingness to sell to school feeding programs.

Bomet having positioned itself as a strong dairy county, it is no surprise that Bomet reports the highest percentage of milk produced at home, kept for home consumption and children's nutrition.

**Figure 4.** Proportion of milk consumed of the total produced by farmers



**Table 2.** Summary of milk sold by farmers

Milk sold by farmers in a week	Across the counties	Nairobi county	Nyandarua county	Bomet county
Average sold (liters)	113.7	311.3	43.3	52.8
Min average sold (liters)	0	0	7	17
Max average sold (liters)	1010	1010	105	105
Percentage sold	73.7	87.7	71.1	68.3
Min percentage sold	14.3	77.7	14.3	50
Max percentage sold	96.2	96.2	88.2	86.7

For a liter of milk the farmers charge an average of KSH 52 across the 3 counties. The highest reported is KSH 80 and the lowest is KSH 40.

**Table 3.** Summary of amount charged by farmers per liter of milk

Cost per milk liter in Kenyan shillings (KSH)	Across the counties	Nairobi county	Nyandarua county	Bomet county
Average cost	52	73	45	45
Min cost	40	60	40	45
Max cost	80	80	50	45

**The primary sale channels reported by the local livestock farmers are as follows:**

- Churches, hotels and schools
- Brokers and Cooperatives
- Neighbors
- Processing plant
- Local community

Of the 28 local livestock farmers, 60.7% reported that they sell milk to neighborhood families while 82.1% reported willingness to sell milk to schools. The ones who are not willing are owing to two factors, one, they already have a strong revenue source at the present or two, they do not have enough production to spare adequate quantities to supply to a school program. On criteria to sell to big cooperatives, 50% reported that there is criteria and the rest reported that there is no criteria.

**The criteria for selling milk to cooperatives are listed below:**

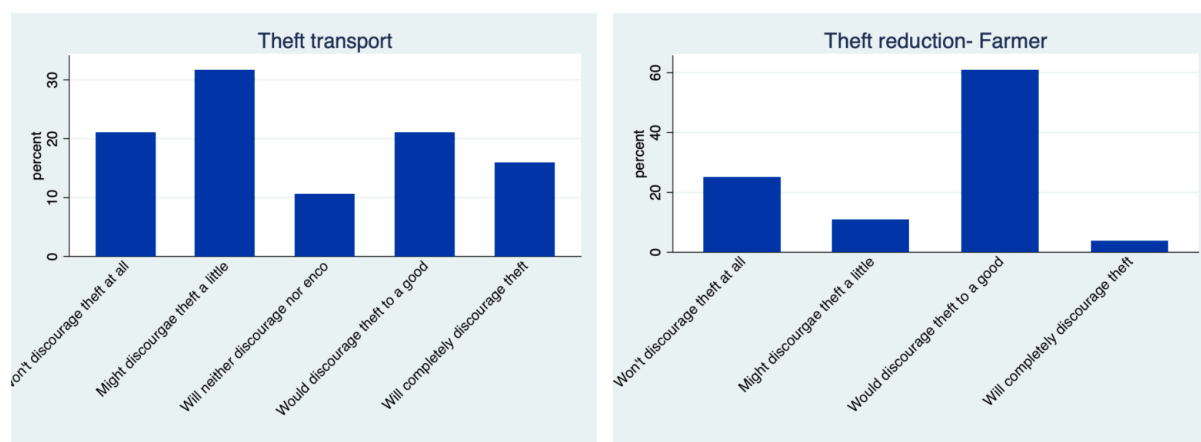
- Dairy board policies and licenses
- Milk pasteurization requirements
- Test milk for disease and addition of water or wheat flour
- Registration of farmers
- No alteration of milk
- No selling outside cooperative
- Quality assurance of milk
- Milk temperature
- Cleanliness

### **Interest in community led programs**

More than half of the dairy farmers find the program somewhat feasible and more than 60% find it somewhat attractive.

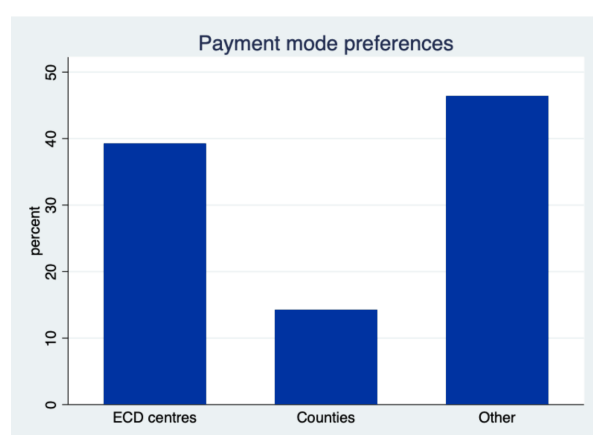
When it comes to packaging, as a measure to circumvent issues of theft which have been lightly mentioned, especially in Nyandarua as one of the reason that led to the program shutting down, we introduced an image of a zip tie on a milk can to gather insights around the probability of theft given the zip tie.

Most of the dairy farmers (60.71%) believe that the mechanism displayed would discourage theft to a good extent. On the side of the transporters, the responses are more evenly distributed where there is no clear majority amongst respondents that the intervention would discourage theft to a good extent.



### Preference regarding payments

Most of the farmers preferred to be paid directly by the caregivers, at the community level, some even mentioning the role of community chiefs being essential in ensuring a timely payment. The other acceptable mode reported was via ECDE center as highlighted below. There is consistently a low level of trust towards payments originating from the county governments.



### Other payment modes included:

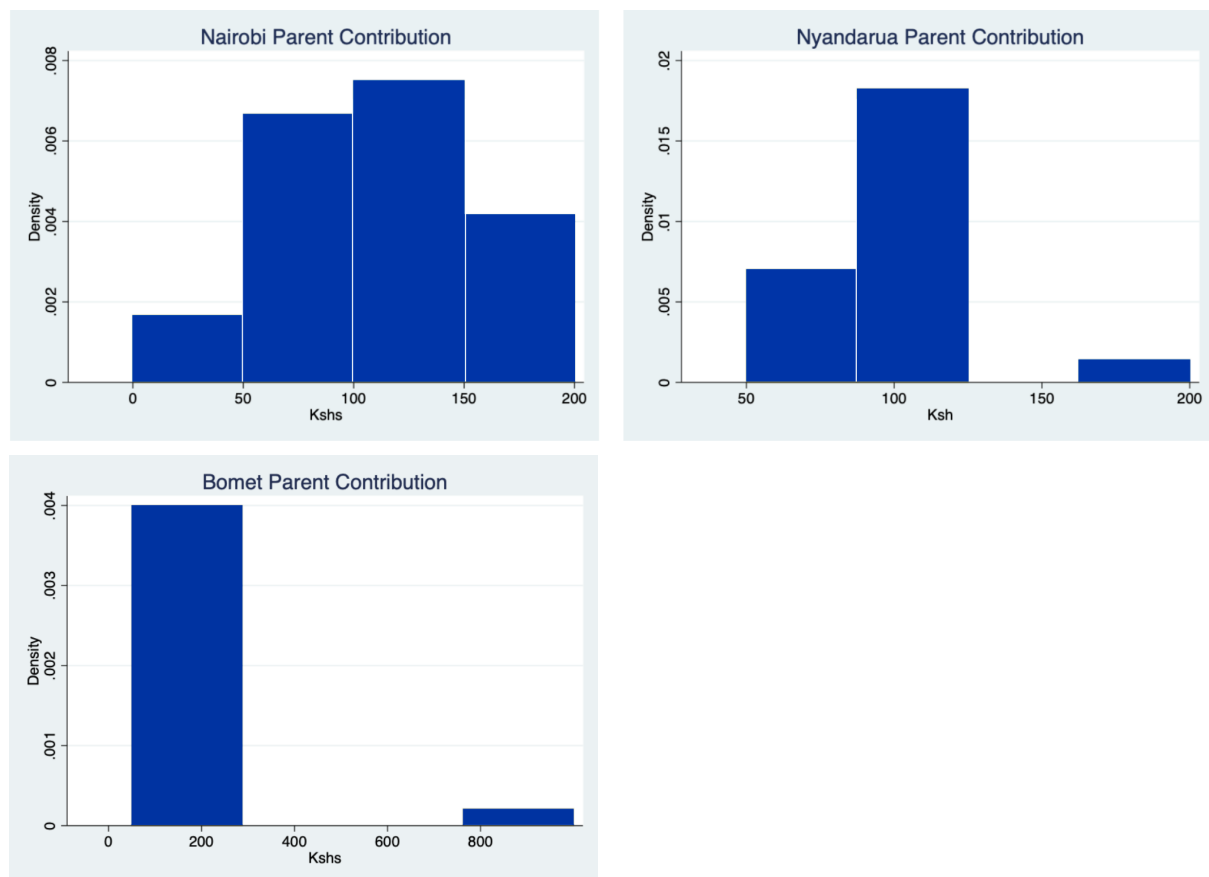
- Cooperative societies
- Primary care givers
- The transport person or school rep collecting the milk

## Caregivers

There is unanimous agreement from caregivers that milk is an important part of the children's diet with 78.46% strongly agreeing that dairy should be an essential nutrient in the daily dietary intake. In regards to safety, all of the primary caregivers strongly agreed that the milk is good quality that is currently served in ECDE centers.

A majority disagreed that the milk program is a major motivator to their children's enrollment in school. We sense another social desirability bias having affected responses to this question, since the increase in enrollment following the rollout of the milk feeding program tells us another narrative from the point of view of the caregivers.

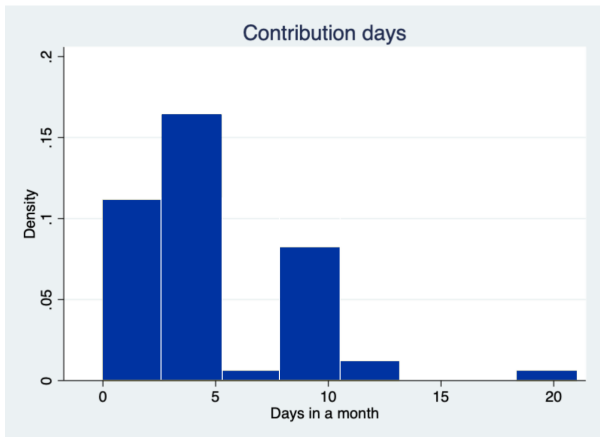
Assuming that the child would receive milk twice per week (totalling to eight times a month), on average Nairobi and Nyandarua are willing to contribute around KSH 90 to KSH 92 to the milk program while Bomet is willing to give KSH 116 as can be seen below (please note Bomet had a really high standard deviation).



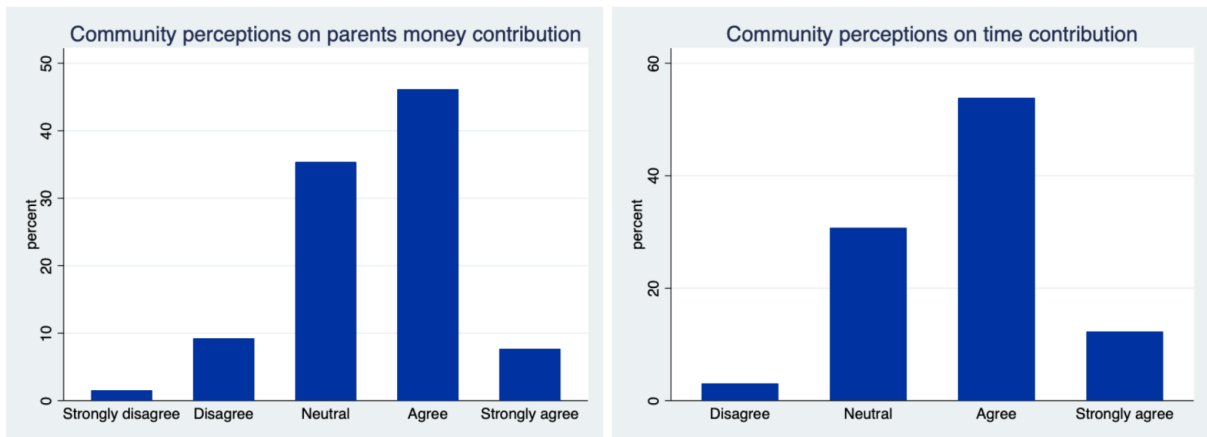
When it comes to willingness to let go of respondent incentive (KSH 300), 76.19% of the caregivers agreed with this, while 20.63% were neutral. A majority of the caregivers agree (66.15%) and strongly agree (26.15%) with being interested in taking up some of the coordination and responsibility with milk distribution. Only 2 (3.08%) respondents, who were from Nyandarua, disagreed and 4.62% were neutral. Bomet had the highest percentage of respondents who agreed at 70%, followed by Nyandarua (68.42%), and Nairobi (61.54%). For those who strongly agreed, 34.62% were from Nairobi, 21.05% from Nyandarua, and 20% from Bomet. On average, the



caregivers were willing to contribute 4.5 days in a month to the program. In Bomet and Nairobi, the caregivers were willing to contribute an average of 5 days, and 3 days in Nyandarua.



With regards to the community perceptions, more than 40% of parents and community members are willing to contribute money and time towards the program. Although, this statistic is closely followed by those who are neutral as well.



**Safety concerns around pasteurization and packaging**

Almost all the caregivers also opined that it should be the caregivers themselves who handle the milk between the source at the dairy farmer and the actual distribution at schools. This is because there are concerns about the safety and storage of the milk that would be consumed.



# Limitations

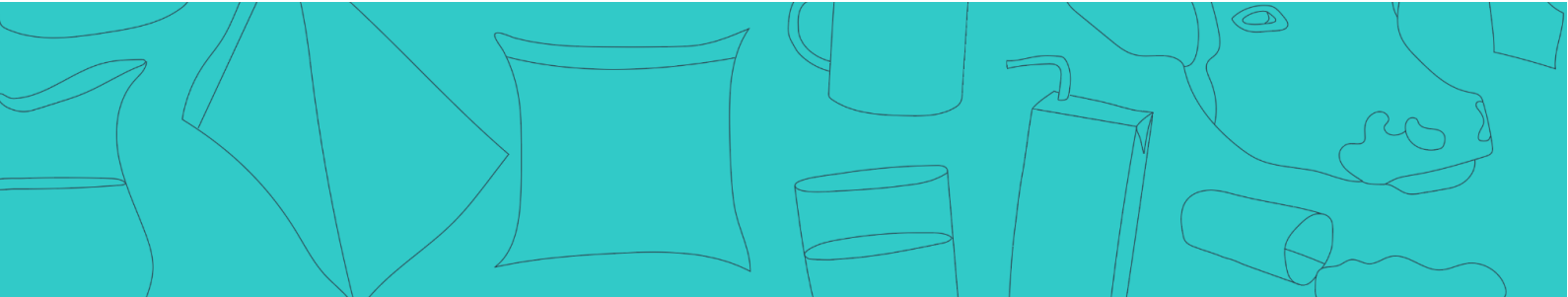
Our methodological approach led to a number of limitations that affect the interpretation and application of our results. We used convenience sampling to recruit, which is cost effective and time efficient, but biases our sample. As such, they are aware of the importance of feeding programs, and they likely recognize the need for this research. Their knowledge and perceptions are reflected in the answers they provided during the IDIs and may not represent the average caregiver in rural Kenya, who is not currently aware of any school feeding program.

In addition to bias sampling methods, our overall sample is relatively small. Small sample sizes are common in qualitative research, as these studies aim to uncover in-depth, nuanced findings. However, small samples do not provide us with the information we need to draw quantifiable insights about our population of interest; the study did seek to quantify the insights, but...

For example, we cannot determine which enablers and barriers to support a community led effort of a feeding program are the most significant across various stakeholders. Relatedly, the demographic information - gender, age, profession, location, etc. - for our archetypes are only approximations.

Finally, some of the responses we received may be biased because of the questions we asked. We talked to key informants about various roles and responsibilities they undertake. They may be excited about their work, and therefore, their responses may be overly positive and optimistic. We also posed many hypothetical questions to respondents. For example, we asked...

Insights drawn from these responses are based on opinions and perceptions, rather than actual experiences across different stages in the behavioral journey.



# A Discussion on Mechanisms

**A behavioral barrier/problem is when an individual has all reasons to behave in a certain way:**

right incentives, motivation, information, and yet, the individual does not achieve the desired behavior owing to cognitive biases. In a setting such as a Kenyan school feeding program, we are unlikely to categorize a barrier as purely behavioral. There are most often, pressing structural barriers that impede a desired behavior.

A structural factor also can be and often is a barrier to behavior. A 'behavioral barrier' is thus synonymous with 'individual' barrier (e.g. knowledge, attitudes, beliefs, values) while 'barriers to behavior' cover all the other types of challenges that are social, resource or institutional in nature. When undesirable behavior is observed due to 'poorly designed programs, lack of resources, confusing and conflicting information from multiple sources, and many other things that are not directly within the control of the individual', it falls into the category of being a barrier to behavior, rather than a behavioral barrier in itself.

We will now look at some of the stakeholder specific attitudes, their current environments and develop an understanding of the mechanism at play. We will then proceed to fill the gap that is required for them to achieve the target outcome or in this case a target behavior.

Stakeholders	ECDE Heads and School Teachers	Primary Caregivers	Transport Personnel	Dairy Farmers
<b>Expected Behavior</b>	Informed, advocating for children's milk share, motivated to coordinate with other actors to facilitate the rollout.	Sensitized about the importance of the milk feeding program. Willingness to contribute time and effort to logistical coordination and support to ECDE centers.	Accountability for the entire quantity of milk that they are delivering. Commitment towards last mile delivery.	Knowledge about community led school feeding programs. Willingness to sell milk to their local schools.
<b>Current Attitudes</b>	Committed to the cause but not well entrenched.	They have knowledge about the impacts of the milk feeding programs. Preference for children to bring milk home so that it can be shared with the younger siblings.	Not a clear endowment effect as yet owing to a staff crunch. This leads to high volumes to be delivered with inadequate pay. Not committed owing to irregular payment schedules.	Aware and mostly willing but not enthusiastic enough to consider school feeding as a viable sales channel.
<b>What do they lack?</b>	Structural			
	Active monitoring and accountability.	Adequate purchasing power and household income that currently cannot sustain construction or improvement to the project.	More realistic delivery routes, potentially more riders, a pay that can justify the high workload, and a proper management channel with a distributor to oversee the day-to-day operations	An organized roster of farmers, with average weekly production capacities and ability to sell to schools neatly documented at the community level.
	Behavioral			
	Knowledge and Regard about benefits of milk to younger children.	Ownership around the milk program for coordination/logistics - increasing well being of the child while in school.	Overcoming present bias by supporting them in visualizing long term benefits. Framing the act of delivery as a responsibility in the value chain which could be recognised and rewarded - the distribution being framed as more than 'just another job'.	They are yet to build a rapport with the community as a whole, despite primary sale channels being churches, schools.
<b>Potential Intervention Area</b>	Structural			
	Secure storage facilities within school premises. A designated staff member to coordinate and oversee delivery and storage. Expecting teachers to (i) teach, (ii) tend to children and simultaneously also monitor the school milk feeding rollout could be burdensome.	A proper structure that divides working responsibility to a support schedule so that the onus of coordinating with delivery personnel and undertaking distribution responsibility is shared by the parents on a rotating basis.	A stronger tie up between the schools on each route and the distributor to enable clear communication, realistic timelines for expected delivery and a better network of riders that does not put pressure on just a handful of transporters.	A cooperative taking the lead to supply to a school feeding program on a pilot basis.
	Behavioral			
	<b>Visual cues:</b> Posters depicting the advantage of the same quantity of milk to a child vs an adult with a message along the lines of 'Who needs this more'? It would be meant to generate feelings of shame and guilt over consuming milk meant for the children.	<p><b>#1:</b> A communal gathering to reiterate and put forth the importance of community participation to the success of the program. Using anchoring / familiarity - A pamphlet that showcases parental efforts in other feeding programs such as uji. This could act as a common reference point (heuristic), and make decision making easier by depicting what is familiar and what's worked before.</p> <p><b>#2:</b> Benefits of milk shown to be more visible for the child currently in ECDE than the sibling in higher grades who may have another alternative feeding program</p>	A form of recognition / acknowledgement from the county government's end that rewards the time and effort to deliver milk.	Compassionate engagement that can provide assurances regarding payment structures, the sustainability of the community led milk program. A guided facilitation by community chiefs to overcome mistrust issues around payments, and signal values of togetherness.

# Recommendations

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## Need for Collaborating Efforts towards Documentation

At a given time, there seem to be multiple types of feeding programmes ongoing across various schools within a particular county. On the other hand, not every school or county is a beneficiary of a school feeding program. This ties back to the challenge mentioned above in terms of 'data deficit'. There is a notable absence of a centralized system that provides accessible information on the counties with or without functional school feeding programs and initiatives. There also appears to be a lack of data on the impact of the various school feeding initiatives. A centralized system is needed to help inform decision making and areas that can be mapped out for intervention across various parameters.

### **Increased stakeholder collaboration**

Intensified stakeholder engagement is necessary to appeal to government audiences to prioritize the enactment of policies that ensure consistent funding to school milk feeding. This can be attained through strengthening inter-ministerial coordination and collaboration. Strong coordination results in multiple benefits to the different ministries and beneficiaries. (MOEST, 2016)

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## Stronger Network of Reliable Distributors and Officers to Oversee the Delivery Logistics

A consistent feedback across all ECDE teachers as well as one of the reasons why the milk feeding program in Nyandarua was halted has been the weak nature of the supply channels. Recruiting transporters to facilitate deliveries is not enough to solve the distribution challenge, as supported by one of the respondents in Bomet who claimed to have delivered to more than 42 ECDE centers on one route. The logistics front needs more optimized planning as well as more transporters in general to solve for the staff crunch.

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## Systematic upward feedback between ECDE teachers and county officials

The current operational model does include necessary paperwork such as, processors documenting their supply quantity on a regular basis, the amount of milk that ECDE centers have to sign upon delivery, the information around actual enrollment rates being reported by each ECDE center to the ward officers. Yet, we see insights around decision making not based on real data, such as increased quantity of milk supply to cater to more students, or planning on school delivery frequencies based on their storage capacity and road infrastructure required to access the centers.

Additionally, a clear communication of the days for delivery in week and more onus on the transport providers would ensure a guaranteed milk supply, at a decided frequency each week, and not intrude with the teacher's time or the school resources needed to facilitate the last mile delivery on their own.

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## Alternative financing and resource supply models

Through the exploration of alternative financing models such as internally facilitated activities that encourage sustainability in the event of funding and supply deficits, school feeding programs can gear towards attaining more sustainable pathways. Interventions such as parents contributing to a common fund could go a long way. While donor funding is crucial to the advancement of school feeding, available resources need to be expended to exhaust internal capacities to bridge deficits. As such, internal initiatives would complement the efforts of the government. And thus, making primary caregivers fully realize the operations and value could go a long way into garnering support towards a parent driven financial pool.

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## Improved community and parental participation

There have been significant advantages in schools where the stakeholders were involved in organization and implementations of the feeding programme. Such advantages include; strengthened teacher and parent collaboration, strong link between school and the community and ownership of the programme by the community. In order to improve parental and community participation, there is a need to bring them on board in the whole process of planning and implementation of the programme. Parental and community involvement is vital to the realization of the benefits of school feeding programs. It was therefore imperative that parental participation is likely to provide an avenue to assume ownership of the programme. There is literature around, feeding programmes without community support being weak intervention and likely not to yield the expected outcomes. (Oduya, 2019). Parental and community coordination is thought to significantly increase the value of food in schools in terms of the desired outcomes. These views were in line with Espejo (2009) who posited that involving parents in what goes on at school is critical to raising the level of education for the whole community. This would go a long way in increasing the potential base of the community. USDASP 2013 report, reported that creating dependable safety nets was inevitable as it ensured accessibility to food for the entire community. This would strengthen communities to transition from free food aid distribution and as such demonstrate how safety nets further improve community-based systems for protecting vulnerable populations.

# Annex

## Annex 1

### **A look at the operational mechanisms of previous feeding programs**

The national school feeding programs target food inequality in the most vulnerable areas of Kenya, including school districts in the arid and semi arid regions and the informal urban slums of large cities such as Nairobi and Mombasa. To address historical primary school absenteeism among Kenya's most impoverished and traditional communities, free meals are used as an incentive to attract school-aged children to class. Within rural communities in which food is scarce, this daily meal provision relieves much of the burden of childrearing.

Many private implementers fall under the spectrum of NGOs operating for impact in the school feeding space. By routinely feeding school pupils, the organizations demonstrate that positive educational outcomes - increased enrolment, retention, improved academic performance and mitigated drop-out levels, can be significantly influenced by providing adequate nutrition through school feeding programs.

- (i) The first fully funded government school feeding program under former president Daniel Arap Moi, provided milk to 4.3 million students in 11,000 public primary schools across the country. Kenya Co-operative Creameries (KCC) delivered milk directly to schools and through the infrastructure of the Ministry of Education (MOE). The program provided a guaranteed market for Kenyan milk and dairy farmers, increased school attendance, and improved children's health. The program ended after 19 years due to high and unsustainable costs, poor road infrastructure, lack of capacity and clear implementation strategy.
- (ii) World Food Programme School Meals Programme (1980-2018) : Launched in 1980 by the World Food Programme (WFP) and Ministry of Education (MOE) to target food insecure districts with low enrolment and completion rates, the program was also set to tackle the high gender disparities in arid and semi-arid lands (ASAL) across Kenya and unplanned urban settlements in Nairobi. The program initially benefited 240,000 children and grew to reach 1.5 million children by its end. In 2009, WFP began to scale back its school meals programme in Kenya and the Kenyan government initiated its home grown school feeding program to compensate for the reductions. From 2009 to 2018, WFP gradually handed over all school meals responsibilities to the Kenyan government.
- (iii) Home Grown School Meals (HGSM) Programme (2009-Present) : The HGSM program was launched in 2009 by the Kenyan government in response to the WFP scaling back its program. The goals are to support educational achievements and stimulate local agricultural production by purchasing food from smallholder farmers/local food suppliers. The programme transfers cash stipends directly to participating schools twice a year and implementation is overseen by local School Management Committees to reduce overhead costs. Parents, teachers, and community members then purchase food from local suppliers and markets. Food is prepared by school cooks, who are recruited and paid by the community. Participating farmers also receive training and support. This programme currently targets 1.5 million children in primary schools and costs the Kenyan government

KSH 11 per child, per day. It is one of the largest school feeding programs in East Africa. However, since the WFP's withdrawal, the program has experienced occasional breakdowns due to a lack of funding.

- (iv) Njaa Marufuku Kenya (NMK) (2005-2016): This was started by the Ministry of Agriculture in 2005 to support agricultural development and improve agricultural practices, and incorporated a school meals programme. Similar to the HGSM programme, the NMK programme provided funds to target schools, which School Meals Committees and parents then used to procure food. Funding was provided over a three year period, and gradually diminished (100% → 75% → 50%), with parents contributing the remaining percentage to provide a sense of ownership. Funds to schools were also used to start school gardens that would supplement school meals. Smallholder farmers were also provided with agricultural extension funds. Target schools had medium-to-high agricultural potential, high poverty and malnutrition levels, and low academic performance/school attendance. By 2013, the NMK program reached 63,000 school children in 96 primary schools. The programme was eventually phased out due to the inability of schools/communities to sustain financing of school feeding after the three-year funding period was over.

## Annex 2

### Categorization of challenges faced by school feeding programs

(Food4Education Report, 2021)

Challenge	Summary
<b>Lack of a national policy</b>	The lack of national policy mandating school feeding has resulted in the landscape being fragmented as there is no control over the price and structure of the school feeding programmes across schools.
<b>Inconsistent financial support</b>	Inconsistency and the shortfall of uniformity in the financial support being given by the government as well the absence of ring fencing of budget for school feeding has led to suboptimal systemic operations occurring in instances where the funding earmarked for school feeding programmes is not consistent and can be lower than required.
<b>Infrastructural challenges</b>	Poor road conditions, procurement delays and infrastructural challenges such as poor storage systems are some of the impediments to the timely and effective delivery of school feeding interventions.
<b>Community Resistance</b>	Implementers are met with community resistance and difficulty obtaining buy-in before they can execute their programmes.
<b>Data Deficit</b>	There is a notable absence of a centralized system that provides accessible information on the counties with or without functional school feeding programs and initiatives. There also appears to be a lack of data on the impact of the various school feeding initiatives. A centralized system is needed to help inform decision making and areas that can be mapped out for intervention across various parameters.
<b>Low purchasing power of parents</b>	Due to economic hardship, the low purchasing power of parents has been attributed to hindering the uptake of school feeding programs that require contribution from parents. Due to limited resources of parents, they are unable to provide the funds



required for the sustainability of programs in schools where their children are enrolled, at times leading to program stoppage and collapse in schools.

## Annex 3



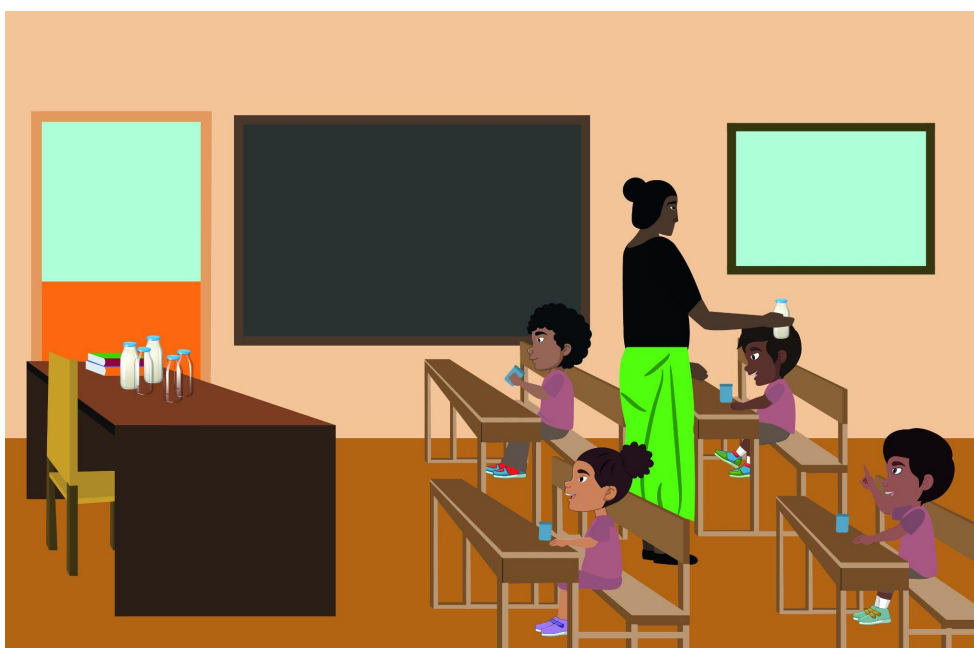
Here is a farmer from your county handing over a can (or cans) of milk from his own cows (or herd of cows) to a local boda rider. The farmer is linked to a processor but puts aside a portion of his milk to get to an ECD center for the milk programme.



Community participation efforts, such as parents of ECD children taking turns to monitor the milk being boiled and stored in reusable bottles in a Public Health certified kitchen. It is now ready for transportation. The local rider then takes the boiled and packaged milk to an ECD center.



The local rider delivers the boiled and packaged milk to the school to be taken to the ECD centre. Money is collected monthly from parents' contributions by the ECD teacher. The rider is then paid by the ECD teacher from the money collected from the milk received.



After the milk is delivered, the teacher hands out the milk to the students to drink. The milk is poured into plastic cups for the students, while the reusable bottles are kept aside to be reused for packaging.

**Annex 3 Illustrations by:** Ravisha Mehta