Fill the Nutrient Gap
Kenya

Northwest Kenya Refugee Camps

Report

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SAVING LIVES
CHANGING LIVES

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Contents

Highlights

Kakuma Camp and Kalobeyei Settlement in northwest Kenya host nearly 200,000 refugees and asylum seekers. The World Food Programme (WFP) supports the Government of Kenya's response by providing lifesaving assistance and strengthening the long-term resilience of vulnerable populations within the camps. In 2019–2020, WFP undertook a Fill the Nutrient Gap (FNG) analysis to better understand the barriers that prevent households from accessing nutritious diets and to identify opportunities to improve nutrition within the camps. The study resulted in the following key findings and recommendations:

- **While it is possible to meet nutrient needs using locally available foods, a nutritious diet costs 249 Kenyan Shillings (KES) per household (HH) per day, nearly twice as expensive as an energy-only diet (KES 130/HH/day) and is out of reach for most of the refugee population.** The cost of fresh and nutritious foods is driven up by low productivity, environmental shocks, high transport costs, and an inefficient retail sector.
- **Few households can meet survival needs without assistance, but the in-kind portion of the mixed modality assistance covers only 35–57 percent of nutritional needs.** Even the inclusion of cash with the in-kind assistance leaves a gap of KES 45–98 per day per household to obtain a nutritious diet.
- **A monthly cash-based transfer (CBT) of KES 2,500 per person just covers the cost of a nutritious diet in all camps.** However, the success of CBT depends on a fully funded pipeline and nutritious foods not only being available and affordable in local markets, but demanded by households and consumed by vulnerable groups.
- **Food assistance should be safeguarded against reductions, which leave a financial burden on households to meet nutritional needs, increasing the risks to children, adolescent girls, and pregnant and lactating women (PLW).** Food assistance programmes should include a social and behaviour change communication (SBCC) component to improve child feeding practices, and should monitor dietary quality for individuals.
- **The provision of Super Cereal Plus (SC+) to children under two and lactating women reduces the cost of the household diet by 28 percent, but scale and coverage are insufficient.** Efforts should be made to increase coverage, protect against breaks in the pipeline for SC+, expand micronutrient supplementation, and promote optimal feeding and care practices.
- **The school meal programme is well received by beneficiaries but only covers 20 percent of the cost of a nutritious diet for a school aged child (6–7 years), and even less for an older child.** Improvements to the ration through the inclusion of fortified flour, micronutrient powder (MNP), or a green leafy vegetable can reduce the cost by 26–46 percent. School feeding programmes should include an explicit nutritional objective and should provide nutrition education with a diversified nutritious meal.
- **To ensure the success of a CBT to improve nutrition, and to secure sustainable access to nutritious diets, the food system must provide affordable, nutrient-dense foods year-round.** WFP should support the supply chain and retail of nutritious foods to increase their supply, reduce their cost, and stimulate their demand. Value chain improvements that decrease the cost of dried fish, jute leaf, and sweet potato leaf by 20 percent would lead to a 9 percent reduction in the cost of the nutritious diet to the household.
- **WFP should engage with partners to support sustainable livelihoods and reduce barriers to employment in sectors such as retail, hospitality, telecommunications, and mobile banking.** To close the nutrient gap remaining after the current assistance package, employment must generate at least KES 140 daily per household.

Introduction to the FNG

WFP conducted a Fill the Nutrient Gap (FNG) analysis in the Kakuma and Kalobeyei refugee camps of northwest Kenya. The aims of the analysis were to quantify the nutritional contribution of current interventions and identify the potential of new assistance modalities to meet the needs of vulnerable groups.

FNG is a systems-focused situation analysis which seeks to identify context-specific barriers that prevent households from obtaining and consuming high quality diets that meet their nutrient requirements for a healthy and productive life. The FNG methodology has been developed by WFP with technical support from partners including the University of California Davis, the International Food Policy Research Institute (IFPRI, Washington DC), Epicentre (Paris), Harvard University (Boston), Mahidol University (Bangkok), Save the Children (UK), and UNICEF.

Multiple factors cause malnutrition, including inadequate nutrient intake and disease. The FNG considers whether nutritious foods are available, accessible, and affordable in a specific context, and identifies the barriers that lead to gaps in nutrient intake. The analysis focuses on the extent to which vulnerable people have choices in the foods they consume and how those choices are made. The FNG process identifies and models the impacts of context-appropriate interventions on nutrition across food, health, education, and social protection systems. The results are used to identify entry points across systems, to refine programmes, and to make recommendations to policymakers.

FNG consists of two components: a secondary literature review of food system characteristics and drivers of nutrition outcomes, and a Cost of the Diet (CotD) analysis (Figure 1). Multisectoral stakeholder engagement is a crucial component throughout the process. It ensures not only that the findings are validated, but also that the interventions modelled are feasible and reflect local priorities, and that recommendations are considered in programmes and policies.

The secondary literature review consists of a comprehensive review of data and information on factors that affect dietary intake and nutritional outcomes. These include malnutrition trends over time, characteristics and drivers of food production, supply chain and retail contexts, the food environment, income-generation opportunities, and food behaviour and consumption patterns (Figure 2).

The Cost of the Diet (CotD) uses linear programming software developed by Save the Children UK to identify the lowest cost diets that meet nutrient needs using locally available foods. This approach identifies the extent to which availability and affordability of nutritious foods are barriers to households obtaining nutritious diets, and the analysis is specified for households and for individuals across the lifecycle. CotD software is then used to model interventions across multiple sectors and their impacts on the cost of a nutritious diet for target groups. Interventions to be modelled are identified in consultation with programme units working in the local context, and with multisectoral partners. They reflect current and potential interventions.

Figure 1: Components of the FNG Analysis

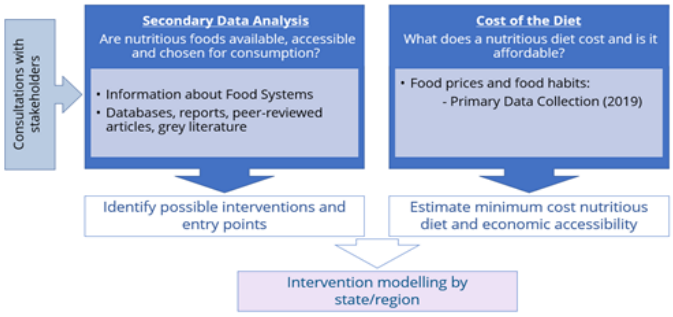
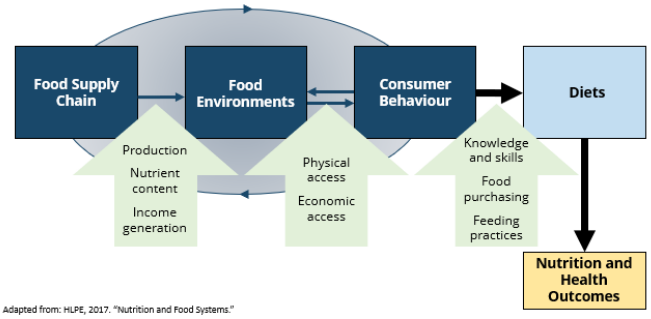


Figure 2: Conceptual framework for the FNG secondary literature review



Camp Context and Study Methodology

REFUGEE CAMP CONTEXT

Kakuma refugee camp was established in 1992 in Turkana County in northwest Kenya. Despite the fact that it has existed for nearly three decades, the majority of camp residents are recent arrivals. When the capacity of Kakuma was exceeded in 2014 following a large influx of arrivals, the Turkana County Government and UNHCR jointly established Kalobeyei Integrated Settlement 40 kilometers from Kakuma.

The Kalobeyei Integrated Socio-Economic Development Plan (KISEDP) was officially launched in December 2018. It established a self-reliance model in the camp based on integration with the local host community, promotion of agricultural livelihoods, and market support. However, this approach has been strained by the subsequent arrival of large numbers of refugees, and the population remains highly dependent on emergency assistance.

Currently, Kakuma and Kalobeyei settlements together host 197,133 refugees and asylum seekers (UNHCR, 2020b). The majority of residents are from South Sudan, comprising 74.3 percent in Kalobeyei and 53 percent in Kakuma. After South Sudan, the most represented countries of origin in Kakuma are Somalia (23 percent), Democratic Republic of Congo (8 percent), Sudan, Burundi and Ethiopia; in Kalobeyei, they are Ethiopia (12.5 percent), Burundi and Democratic Republic of Congo (UNHCR, 2020c).

Acute and chronic malnutrition rates are high in both camps. As of December 2019, stunting rates were 22.4 percent in Kakuma and 32 percent in Kalobeyei, both representing small increases from the previous year (UNHCR, 2020d). In Kakuma, the total rate of wasting was 9.5 percent, with severe acute malnutrition (SAM) at 0.4 percent, while in Kalobeyei total wasting was 8.2 percent with SAM at 1.1 percent. Total wasting figures remain high despite a small decline from 2018 (UNHCR, 2020d; UNHCR, 2019). Total anaemia in children under five was 54.5 percent in Kakuma and 57.5 percent in Kalobeyei, both exceeding the public health threshold of 40 percent (UNHCR, 2020d).

IDENTIFICATION OF NEED FOR THE FNG

The World Food Programme works with partners and the Government of Kenya to provide lifesaving assistance to vulnerable populations in Kakuma Camp and Kalobeyei Settlement. In addition to providing cash and in-kind food assistance and nutrient-rich commodities to refugees, asylum seekers and vulnerable Kenyan populations, WFP engages in SBCC and support for self-reliance activities in the camps. WFP works to ensure the long-term sustainability of food systems by supporting the creation of community assets, strengthening value chains for nutritious foods, facilitating market access, providing technical expertise in supply chain management, and strengthening country level capacity (WFP, 2019).

In 2019, WFP's Kenya Country Office identified the need to conduct a Fill the Nutrient (FNG) analysis in the camps to examine the contribution of existing programmes to the nutrient needs of the population, to model the impact of potential interventions, and to generate recommendations and increase advocacy around the approaches that can best support the needs of the most vulnerable. In particular, there was donor and stakeholder interest in better assessing different food assistance modalities such as CBTs.

STUDY METHODOLOGY

Primary data on local food prices was collected in October 2019 in three camp areas of Kakuma (Kakuma 1, 3, and 4), in Kalobeyei Settlement, and in the two host communities. Multiple markets were visited according to the relative size of the camp, and in each market four vendors were surveyed (Table 1). The food list was exhaustive, intended to capture all available foods in each market.

Table 1: Markets visited and vendors surveyed by assessment area

	Kakuma 1 Camp	Kakuma 3 Camp	Kakuma 4 Camp	Kalobeyei Settlement	Kakuma Town	Kalobeyei Town
Number of Markets Visited	3	2	1	3	1	1
Total Vendors Surveyed	12	8	4	12	4	4

Data analysis was undertaken in early 2020. Price data were cleaned and processed to calculate the average price per 100 grams for each food item per camp area. Cooked and manufactured foods, and foods of low nutritional value such as spices, herbs and teas, were excluded from the analysis. Nutritional values were adjusted in the CotD software using data from the 2018 Kenya Food Composition Table when available (FAO/Government of Kenya, 2018).

The modelling parameters for household size and composition and staple food preferences were determined in consultation with the WFP Kenya Country Office. It was determined that a model five-person household would be representative of an average household in the refugee camps. The household used in the models consisted of a child aged 12–23 months, a school aged child of 6–7 years, an adolescent girl aged 14–15 years, a lactating adult woman, and an adult male. To ensure that the optimized diets reflected basic dietary patterns, the models were adjusted to include two portions of a typical staple food, with maize grain and sorghum selected in this context.

The baseline analysis was performed using CotD software to calculate the cost of an energy-only diet and the cost of a nutritious diet. The energy-only diet meets energy needs without consideration for nutrient requirements, while the nutritious diet meets requirements for protein and select vitamins and minerals without exceeding an individual's energy and fat requirements.

After calculation of the baseline, additional optimization models were analysed using CotD software to examine the impact of different interventions and assistance scenarios. The modelling plan was developed through consultations with WFP's Kenya Country Office and the Regional Bureau in Nairobi (RBN). It was selected to reflect the following: current levels of assistance, reduced levels due to resource constraints, increased levels due to programme expansion, and novel interventions.

The study findings were presented, revised, and validated through a series of internal sessions and workshops in the latter half of 2020. These workshops also contributed to the development of the study's recommendations, which were shared internally, revised, and disseminated externally in late 2020 and early 2021 among WFP partners in Kakuma and Kalobeyei.

Main Findings

Finding 1: *The low availability and variety of fresh foods in markets drives up the cost of nutritious diets in the camps*

Points to Note

⇒ **The number of unique food items varies greatly between camp markets**

⇒ **Nutritious foods are more expensive per calorie than staple foods in the camps**

⇒ **The high cost of nutritious foods contributes to poor dietary diversity and nutrition outcomes**

The food system in the refugee settlements of Kakuma and Kalobeyei is characterized by low productivity, environmental shocks, high transport costs, and an inefficient retail sector. These conditions lead to low diversity of foods available in camp markets and puts upward pressure on prices for fresh and perishable foods. Primary data collection for this study found the number and diversity of fresh foods varies between markets and that fresh, nutrient-dense foods such as vegetables and animal-source foods are more expensive than calorie-dense staples such as cereals and oil. Figure 3 displays the number of nutritious foods per food group by camp market, with two host community markets for comparison.

Among the camp markets surveyed, the total number of unique food items was lowest in Kakuma 4 and highest in Kakuma 1. The number of foods from nutrient-dense food groups (meat, fish, fruit and vegetables) was also lowest in Kakuma 4. Compared to all surveyed areas, the markets in the Kalobeyei Township host community had noticeably fewer unique food items available, particularly fresh and perishable foods.

On a per calorie basis, nutritious food such as vegetables, fruit and animal products are more expensive than grains, legumes, tubers, and oils (Figure 4). As consumption is correlated with energy needs, the poorest households typically fulfil their calorie requirements with the least expensive foods available. This low dietary diversity puts them at risk of nutritional deficiencies.

Figure 3: The number of nutritious food items varies by market and is lowest in Kakuma 4 and Kalobeyei Township

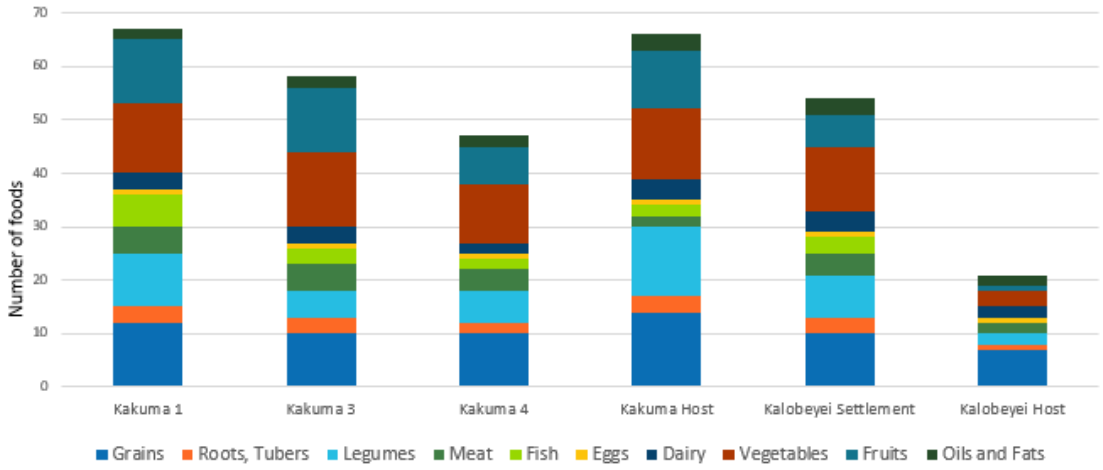
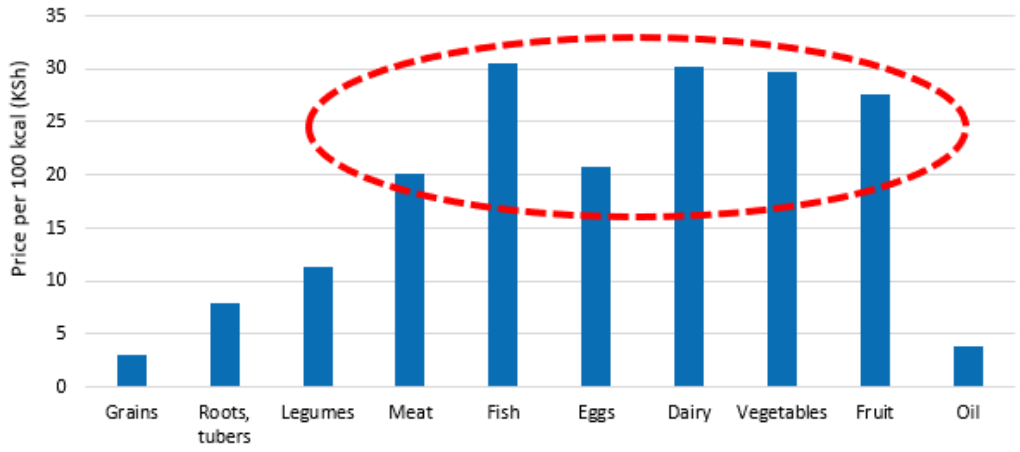


Figure 4: Calories from nutrient-dense foods are more expensive than those from staple foods



The relatively higher prices and lower availability of nutritious foods in refugee camp markets is reflected in dietary intake data from refugee populations. According to recent data, the average household dietary diversity score is 3.8 in Kakuma and 4.0 in Kalobeyei (UNHCR, 2020d). Over one fifth of households in Kalobeyei and over three quarters (77.1 percent) of households in Kakuma Camps reported not consuming any vegetables, fruit, or animal-source foods (meat, eggs, fish, dairy) within the survey period. While these figures indicate low dietary diversity in both camps, the relatively better indicators for Kalobeyei reflect the structural differences between food systems in the camps.

Finding 2: *A Nutritious Diet is Twice as Expensive as an Energy-Only Diet*

Points to Note

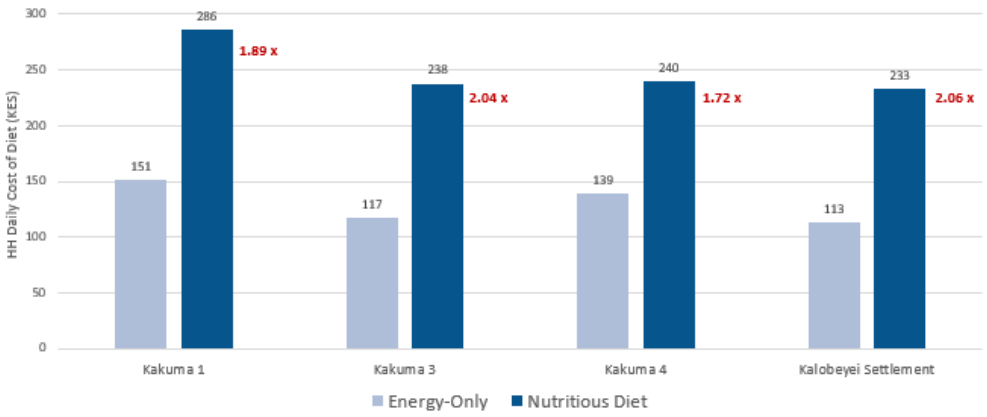
⇒ **It is possible to meet household nutrient needs using locally available foods**

⇒ **Considering only energy when calculating CBT size poses serious nutrition risks**

The CotD software was used to calculate the lowest-cost diet that meets energy needs and the lowest-cost diet that meets nutrient needs, using locally available foods. The findings indicate that it is possible to meet the nutritional needs of a model household using locally available foods in all camp markets. These findings suggest that food availability is not a barrier to refugee households achieving optimal nutrition outcomes. Among the other factors that contribute to adverse nutrition outcomes are affordability, purchasing and consumption behaviours, nutritional knowledge, and intra-household distribution.

The results of the CotD analysis found that across camps an energy-only diet that meets the caloric requirements of the household without considering other nutrient requirements ranged from KES 113 to 151 daily. In comparison, a nutritious diet that meets all household requirements for essential nutrients was found to be 1.72 to 2.06 times more expensive than an energy-only diet (Figure 5). Of all camps, Kakuma 1 recorded the highest cost of both diets, indicated that food prices are generally higher in Kakuma 1 markets.

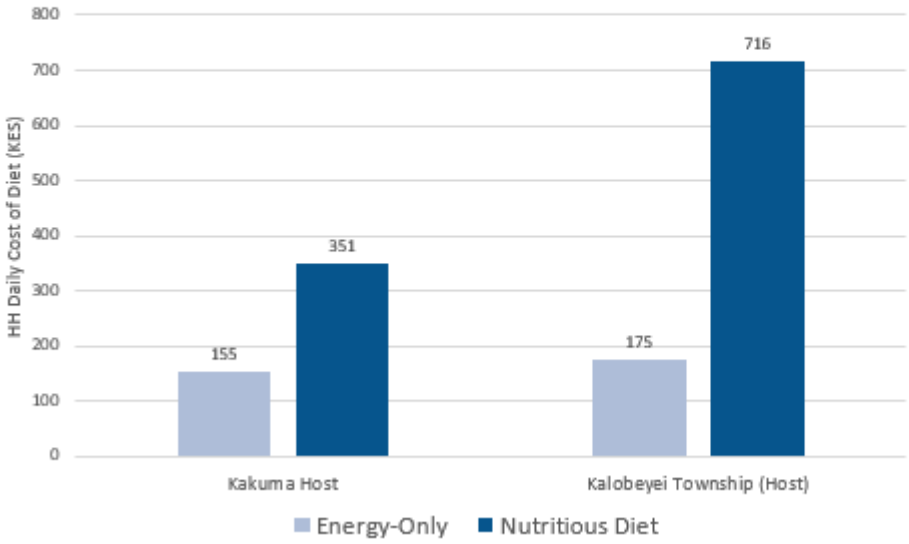
Figure 5: A nutritious diet is up to two times as expensive as an energy-only diet in the camps



These findings show that in Kakuma and Kalobeyei refugee camps, households face a far greater economic barrier to procuring nutritious diets than diets that satisfy only energy needs. Considering only energy needs when setting assistance levels, whether in-kind food or cash-based assistance, poses a serious nutrition risks for the most vulnerable populations.

Although refugees do not shop in host communities, several markets were surveyed to build a point of comparison for the FNG. Both host markets had higher costs for energy-only and nutritious diets, with the costs of nutritious diets more than twice that of energy-only diets. The difference was even greater in Kalobeyei Township, where the nutritious diet was four times more expensive than the energy-only diet. This finding also reflects the pattern, shown in Figure 6, that Kalobeyei Township markets had by far the lowest availability of foods across all food groups.

Figure 6: In host community markets, a nutritious diet is 2-4 times more expensive than an energy-only diet



Finding 3: *Assistance is crucial for survival, but the current package is inadequate and does not provide for a diet that meets nutrient needs*

Points to Note

⇒ **Assistance provides a lifeline as few households can meet survival needs without it, but even with it they fall short of meeting nutritional needs**

⇒ **Models show that the full in-kind ration (without cash) only meets 50 percent of needs, while a reduced ration meets far less. The inclusion of cash with the in-kind portion still fails to cover the remaining cost of the nutritious diet for the household**

⇒ **Mixed modality assistance in its current form fails to meet the full needs of the population, and any reductions due to shortfalls poses serious additional risks**

The provision of food assistance provides a crucial lifeline to the camp populations as the majority of households cannot meet their survival needs without assistance. A nutritious diet thus remains unaffordable for a great proportion of the population. Despite being a lifeline for many residents, the levels of mixed modality (in-kind plus cash) assistance packages to date still fall far short of meeting the needs of a household. Survey data suggests that the monthly food ration in Kakuma camps lasts only 17.3 days (UNHCR, 2020d) and beneficiaries express a high level of dissatisfaction with the commodities included, which are often resold on secondary markets (UNU-MERIT, 2019).

CotD modelling was used to calculate the extent to which the in-kind general food ration reduces the economic barrier to consuming a nutritious diet. The levels of ration used in the CotD models (shown in Table 2) were based on the full planned ration as outlined in the Country Strategic Plan (CSP), and on two scenarios for ration reduction caused by financing shortfalls and breaks in the pipeline for SC+, as determined by consultations with the Country Office. The increase in the cash portion represents a planned transition to a higher portion of the aid package being delivered in cash over time.

Table 2: Levels of the in-kind general food distribution used in the modelling for Kakuma Camp (grams pp/day)

	CEREALS	SUPER CEREAL PLUS	PULSES	OIL	CASH PORTION (KES/ month)
CSP Level	252	40			500
Reduction 1	168	25	60	35	700
Reduction 2	210	0			700

IN-KIND RATION (EXCLUSIVE OF CASH)

Across the three modelled camps in Kakuma, the full CSP in-kind ration (exclusive of cash), covers only 49 to 57 percent of the cost of a nutritious diet (Figure 7). This leaves a substantial financial burden (KES 103 to 138 daily) on the household to meet their remaining requirements in the marketplace, through income or the addition of a cash transfer.

Changes to the composition of the transfer due to financing shortfalls and breaks in the pipeline for commodities were modelled. The models found that reductions to the in-kind ration pose serious risks to nutrition, as the reduced in-kind rations (exclusive of cash) cover 34–48 percent of the cost of a nutritious diet, and the remaining food portion must be met in the market (Figure 8). Reduction 1 leaves a daily financial burden of KES 125–165 on the household, while the Reduction 2 model leaves a daily burden of KES 147–178.

Figure 7: The full CSP in-kind ration (no cash) covers 49–57% of the cost of a nutritious diet in Kakuma camps

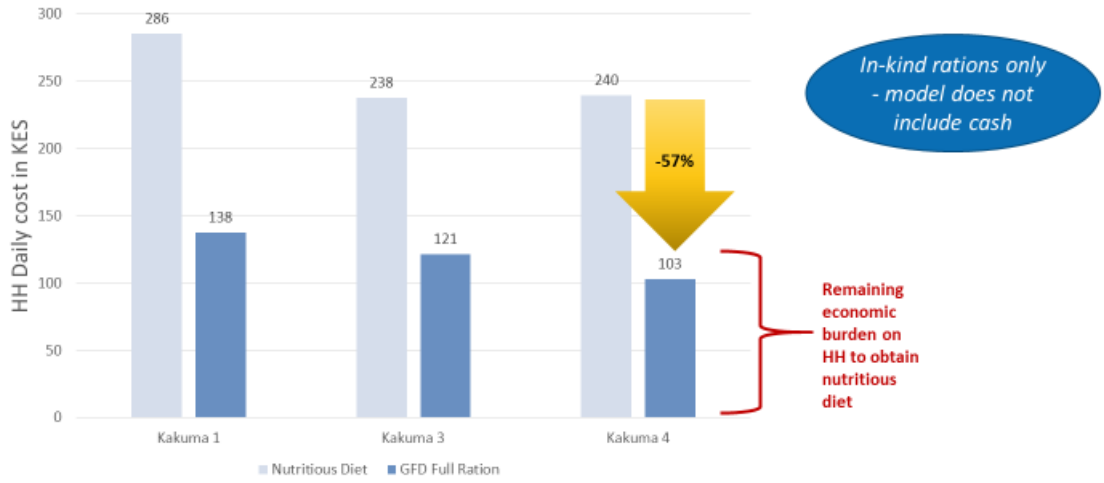
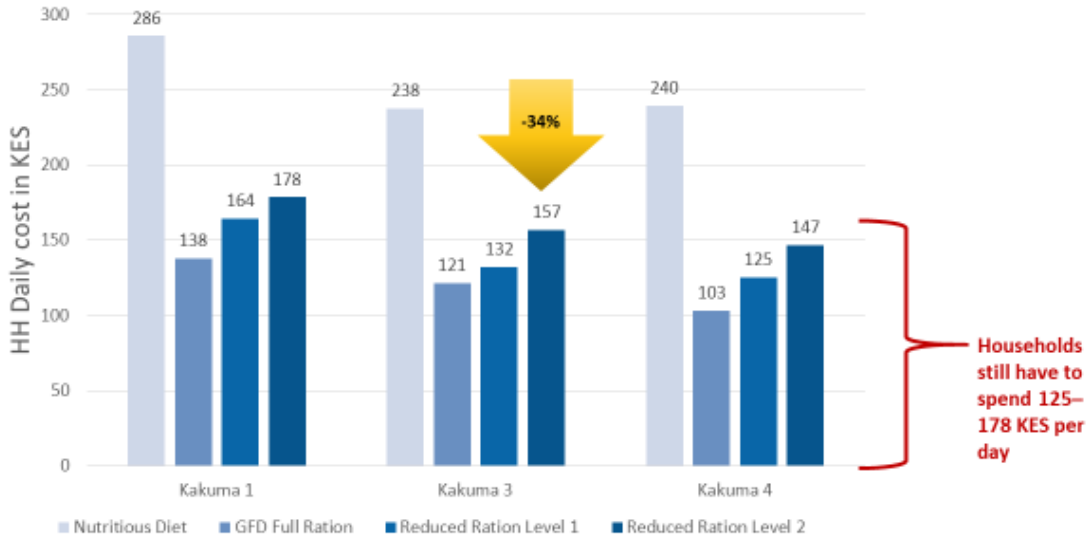


Figure 8: Reductions to the in-kind ration (cash not included) due to financing shortfalls and breaks in the pipeline pose serious risks to nutrition



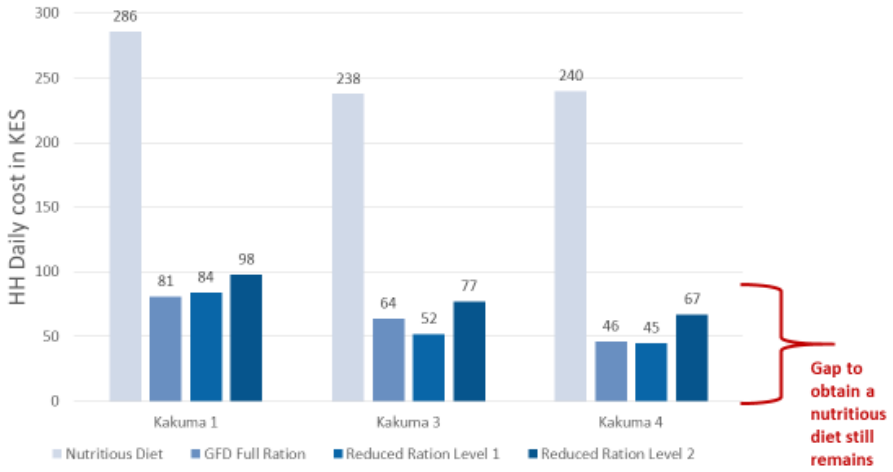
MIXED MODALITY (IN-KIND RATION AND CASH)

The mixed modality assistance (cash with in-kind ration) provides the flexibility to purchase nutritious foods that meet household member's requirements. However, for all assistance levels modelled, the cash transfer was still insufficient to cover the remaining cost of a nutritious diet after the in-kind portion. (These models assume a realistic spending pattern in which food competes with non-food needs, under the assumption that 70 percent is spent on food.)

After the addition of the cash transfer to the full CSP in-kind ration, the burden remaining on the households ranged from KES 46 in Kakuma 4 camp to KES 81 in Kakuma 1 camp. In the two reduced ration scenarios, the addition of a cash transfer also falls short of covering the remaining financial burden to purchase a nutritious diet in the marketplace, ranging from KES 45 to 98 per household per day (Figure 9).

The models which include cash assume it is spent optimally to purchase the lowest-cost nutritious foods, and that these foods are distributed within the household according to needs. In reality these conditions are not met, thus the remaining financial burden on the household is greater than in the model, with a disproportionate burden on the most vulnerable. This also underscores the imperative for nutrition education on the needs of vulnerable groups.

Figure 9: The addition of cash to the in-kind ration (mixed modality) still fails to cover the cost of a nutritious diet in Kakuma



Finding 4: *A cash-only transfer provides a better opportunity to meet nutrition needs than a mixed modality of in-kind assistance plus cash*

Points to Note

- ⇒ **Cash provides numerous advantages and is preferred by many beneficiaries in the camps**
- ⇒ **The full cash value of KES 2,500 monthly, as described in the minimum food basket (MFB), just meets nutritional needs for a typical household but only if spent optimally**
- ⇒ **Any reduction of this full value fails to cover nutritional needs; this is the case for original value provided in the CSP and the values reflecting the realities on the ground**

As previously noted, 100 percent of assistance in Kalobeyei Settlement is given in the form of cash, while beneficiaries in Kakuma receive a mixed modality of in-kind and cash assistance. This study examined the extent to which the value of a 100 percent cash transfer covers the cost of purchasing a nutritious diet in the marketplace in both camps.

The provision of cash instead of in-kind assistance has numerous advantages, and beneficiaries in the camps have previously expressed a preference for cash modalities (UNU-MERIT, 2019). Beneficiaries report that cash is safer from theft than food rations, allows choice between food and non-food necessities, and can promote dignity and women's empowerment (UNU-MERIT, 2019). When markets are functioning at a basic level, such as in Kakuma and Kalobeyei, cash also stimulates the local economy and the increased market demand provides opportunities to strengthen supply and retail in response. However recent studies have also noted the risks of unrestricted cash transfers in Kalobeyei, including indebtedness, insecurity, and gender-based violence (Sterck et al., 2020). Therefore, CBT programmes should consider measures such as the addition of SBCC with cash to mitigate such risks to beneficiaries, which may outweigh the benefits to food security and nutrition.

The CotD analysis modelled the impact on affordability of several levels of the CBT. The original value level, set at KES 1,400 per person per month (pp/pm), was programmed in Kalobeyei Settlement in 2019-2020. The full ration used in the model, KES 2,500 pp/pm, was based on the value of the MFB in the 2020 Minimum Expenditure Basket (MEB) exercise, but has not yet been distributed due to financing shortfalls. Finally, a reduced value of KES 1,700 monthly was modelled to reflect the realities of funding shortfalls in current programming. As in the previous section, modelling of cash transfers reflects realistic spending scenarios in which food competes with non-food needs and represents 70 percent of household expenditure. The values modelled are displayed in Table 3.

Table 3: Cash transfer values used for models

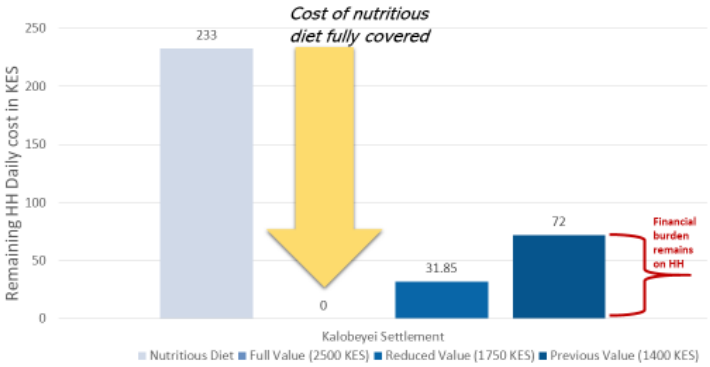
Nickname Used in Modelling	Monthly Amount Per Person (KES)	Monthly Amount for Five Person Household (KES)	Daily Amount for Five Person Household (KES)	Portion Spent on Food (70% Assumption) (KES)
Original Value	1,400	7,000	229.51	160.66
Full Value	2,500	12,500	409.84	286.89
Reduced Value	1,700	8,500	278.69	195.08

In Kalobeyei, the full value cash transfer (KES 2.500 pp/pm) covers the minimum cost of a nutritious diet for a five-person household, under the condition that foods are purchased optimally and distributed in the household according to nutrition needs (Figure 10). However, the original value (KES 1,400 monthly) and the reduced value (KES 1,700 monthly), which represent the programming realities on the ground, fall short of covering the cost of nutritious diets in the local markets. The remaining daily burdens on the household are KES 32 with the reduced value and KES 72 with the original value (Figure 10).

Although the assistance to Kakuma camps is currently a mix of in-kind and cash, the full cash transfer values were also compared against the modelled nutritious diets. As seen in Kalobeyei, in all three of the Kakuma sub-camps the full theoretical value of the cash transfer was greater than the minimum cost of a nutritious diet, while the original and reduced values fell short of meeting needs. In Kakuma 1 Camp where the cost of the nutritious diet was highest, the full value level just covered the cost, while the margin was slightly greater in Camps 3 and 4 (Figure 11).

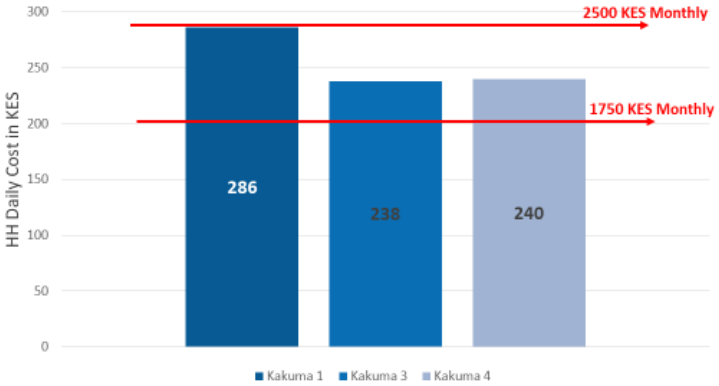
The results of the modelling analysis suggest that the full cash value of KES 2,500 pp/pm constitutes a minimally sufficient transfer value to reduce economic barriers to purchasing nutritious diets in the marketplace. However, the models also assume that the cash value is spent optimally to obtain costlier, nutrient-dense foods, and that those foods are distributed to vulnerable household members according to their needs. These optimal conditions are not met in reality. While the minimal value should be advocated and protected against reductions, additional programmes remain necessary to support the nutritional well-being of the most vulnerable. These include supplementary feeding programmes, school-based feeding, and building supply and demand of nutritious foods through market support, nutrition education and SBCC.

Figure 10: The full cash transfer covers the cost of a nutritious diet in Kalobeyei, but any reduction puts vulnerable people at risk



Note: Models assume spending of 70% cash used for food expenses

Figure 11: The full transfer value covered the cost of the nutritoius diet in all camps except Kakuma 1, where the cost was barely covered



Note: Models assume spending of 70% cash used for food expenses

Finding 5: *Meeting the needs of children, adolescents, and PLW requires foods of higher quality and price; the inability to provide these increases their vulnerabilities*

Points to Note

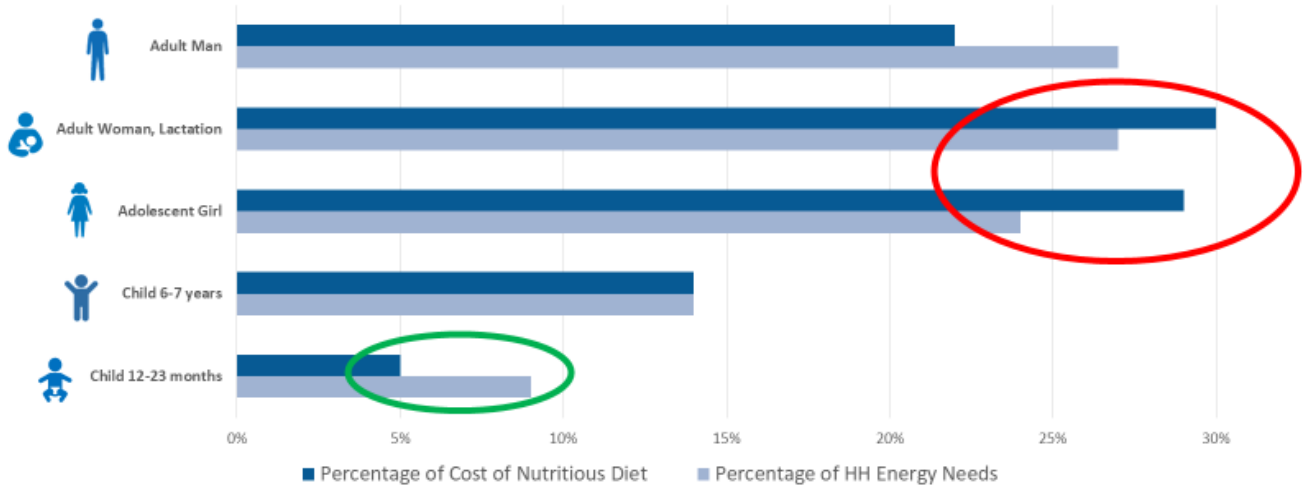
⇒ **The cost of a nutritious diet is driven by nutrient needs, not energy requirements**

⇒ **Adolescent girls and pregnant and lactating women have higher micronutrient needs which are more expensive to meet using foods in local markets**

⇒ **Children are at increased risk if not breastfed due to their high nutrient needs**

Nutritional needs vary greatly across the lifecycle. Certain household members in Kakuma and Kalobeyei camps are more vulnerable due to higher nutrient requirements and the higher cost of foods containing these vital nutrients in local markets. Figure 12 shows the relative proportion of household energy needs for each family member, compared to their share of the cost of the household nutritious diet. Adolescent girls and lactating women have the costliest needs, together representing nearly 60 percent of the total household cost. By contrast, the cost to meet the nutrient needs of an adult man is lower than for the adolescent girl despite his higher energy requirement.

Figure 12: The cost of a nutritious diet is mostly related to nutrient needs, and less to energy needs



Source: Cost of the Diet 2020

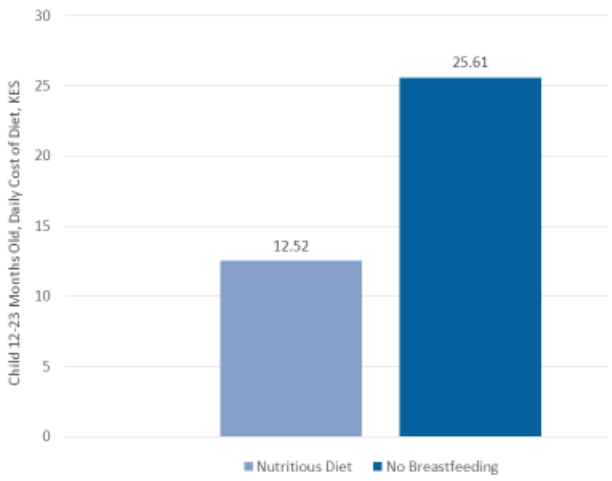
This pattern is due to the finding that energy-dense staples are cheaper in local markets than nutrient-dense fruits, vegetables, and animal-source foods, which provide crucial micronutrients for adolescent girls and lactating women. CotD analysis identified each household member's limiting nutrients, those that are most expensive to obtain locally and drive up the diet cost. For adolescent girls and lactating women the most common limiting nutrients were iron, vitamin A, and pantothenic acid. This may partially explain the high anaemia rates for women of reproductive age, which were 32.9 percent and 29.7 percent in Kakuma and Kalobeyei respectively (UNHCR, 2020d).

Adolescence is a period of nutritional vulnerability for girls and boys in the camps. Although adolescent boys have higher calorie requirements than adolescent girls, the latter require twice as much iron and, on a per-calorie basis, require foods denser in other micronutrients such as zinc and calcium.

Adolescent boys are at risk too, as evidenced by an outbreak of scurvy (caused by vitamin C deficiency) in Kakuma in 2017-2018. Further analysis determined that a number of young single men with no income from work or remittances were entirely dependent on food assistance for their survival (Ververs et al., 2019). As the in-kind ration failed to cover their elevated calorie needs, they spent the remaining CBT value on energy-dense staples, the cheapest local source of calories, leading to micronutrient deficiencies. CotD analysis confirmed that the limiting nutrients for this age group were vitamins C and A, and calcium. Without access to foods providing these nutrients, such as green leafy vegetables, the risk of nutritional deficiencies remains high.

CotD analysis also determined that the limiting nutrients for a child under the age of two were iron, vitamin A, and folic acid. This is consistent with elevated rates of anaemia recently found in this age group (54.4 percent and 57.5 percent in Kakuma and Kalobeyei respectively) (UNHCR, 2020d). Breastfeeding rates in the camps are fairly high, with more than 80 percent of children under 6 months exclusively breastfed and more than 90 percent breastfed at 12 months. However, the rate of exclusive breastfeeding at 2 years declines (51.4 percent in Kakuma and 60.6 percent in Kalobeyei), and complementary feeding indicators are poor. The rate of timely introduction of solid, semi-solid or soft foods is around 50 percent, underscoring the nutritional vulnerabilities of children during the complementary feeding period (UNHCR, 2020d). CotD modelling was used to estimate the increased risk to children under 2 if they are not breastfed; the findings reveal that without breastmilk, it is twice as expensive to meet the child's nutrient needs using locally available foods (Figure 13).

Figure 13: If a child under 2 is not breastfed, the cost of its nutritious diet is twice as high



Finding 6: *Interventions for the most vulnerable provide essential nutrients and protect against malnutrition*

Points to Note

⇒ **Nutrition specific interventions are crucial for vulnerable women and children**

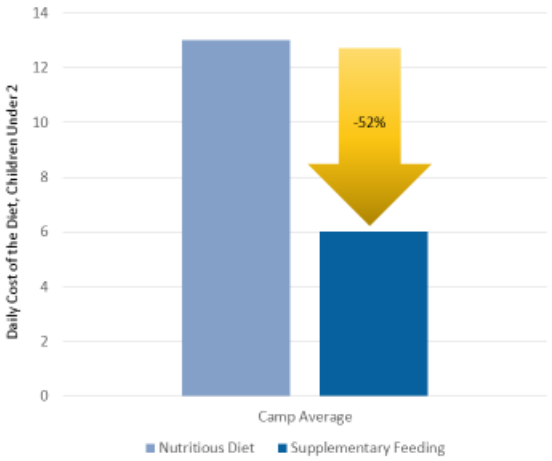
⇒ **Provision of SC+ to children under 2 and lactating women reduces the cost of the household diet by 28 percent, but coverage is still insufficient**

⇒ **Interventions should focus on improving value, protecting against breaks in the supply chain, and combining with other packages of interventions**

Women of reproductive age, children under 2, and adolescent girls are at increased risk of malnutrition due to their elevated requirements for nutrients such as iron, which are expensive to obtain in local markets. Nutrition specific interventions, including the provision of SC+ and micronutrient supplements, are crucial to protect these vulnerable groups.

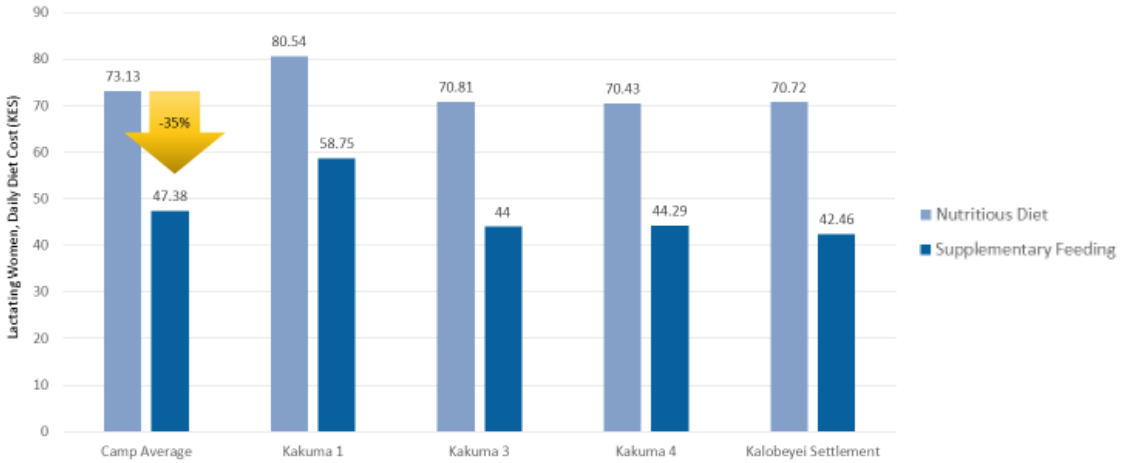
The CotD analysis modelled the provision of an SC+ ration to children under 2. While the total ration used in the model was 200g, the model uses a standard assumption that the child receives a 60g portion with the remaining amount divided among other household members. The findings indicate that provision of the SC+ ration reduces the cost a young child's nutritious diet by 48-52 percent across the camps (Figure 14). SC+ remains an essential intervention, providing a large portion of iron, zinc, vitamins A, C, and B12, and other essential nutrients that are otherwise expensive to obtain in the markets.

Figure 14: Provision of SC+ to children under 2 reduces their cost of a nutritious diet by 48-54%



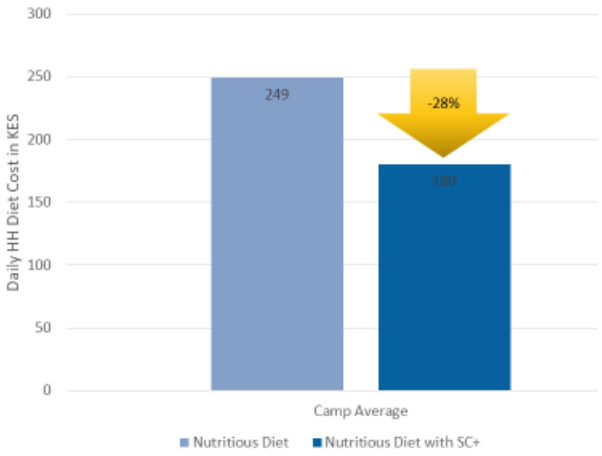
CotD was also used to model the impact of the provision of SC+ to lactating women in a standard portion size of 120g. Modelling revealed that this reduces the cost of their diets between 27 percent (in Kakuma 1) and 40 percent (in Kalobeyei Settlement). While the ration provides essential nutrients, households still face substantial financial burdens to meet the needs of lactating women in the marketplace, ranging from KES 43 to 59 daily (Figure 15).

Figure 15: Provision of SC+ to lactating women reduces the cost of their nutritous diets by 27 to 40%



A combined model examined the potential impact on the household of the provision of SC+ to both the lactating woman and the child under two. The model found a 28 percent decline in the overall household cost of a nutritious diet from these interventions, underscoring their importance (Figure 16). However, the scale of these interventions in the camps is currently limited. Coverage of the nutrition ration was only 27 percent for children and 34 percent for PLW, and the majority of households deemed the rations inadequate or insufficient (UNU-MERIT, 2019).

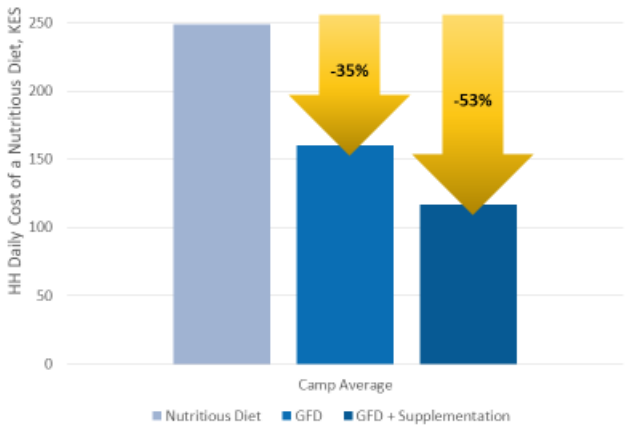
Figure 16: Combined provision of SC+ for children under 2 and PLW reduced the total household cost of a nutritious diet by 28%



The provision of micronutrient supplements is also an important nutrition intervention for vulnerable groups. An iron-folic acid (IFA) supplement meets nearly 40 percent of an adolescent girl's requirements for these two nutrients and reduces the cost of her diet by 15 percent (Figure 17).

A combined package of micronutrient supplements for vulnerable household members has even greater potential. CotD modelled the provision of micronutrient powder (MNP) for children under 2 and IFA for adolescent girls and lactating women. Adding this intervention package to the general food distribution (GFD) ration reduced the average cost of the household nutritious diet by 53 percent, compared to 35 percent for the GFD alone (Figure 18).

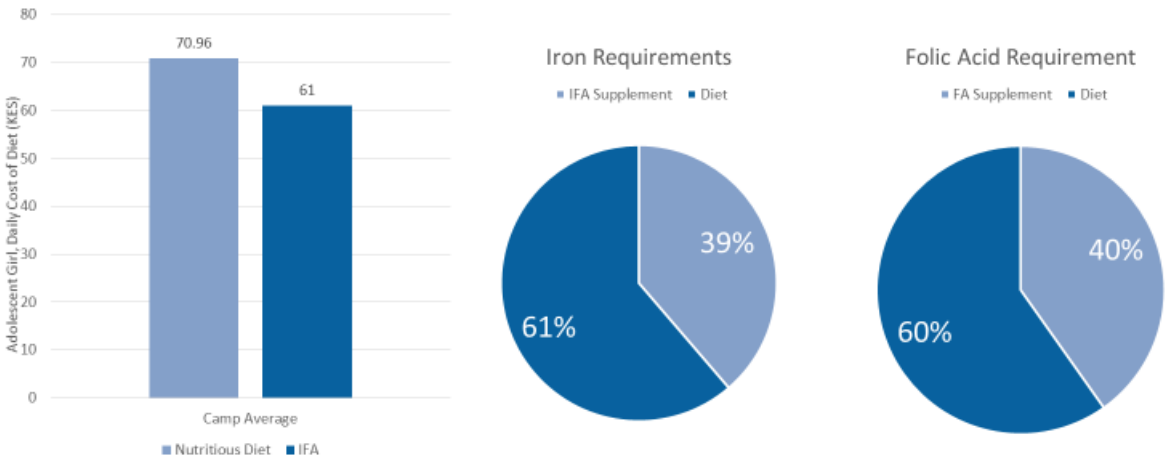
Figure 18: A combined package of micronutrient supplementation to vulnerable household members reduces the cost of the nutritious diet by 18% more than in-kind assistance alone



CotD modelling finds that nutrition specific interventions, including provision of SC+ and micronutrient supplements to vulnerable household members, have great potential to bring nutritious diets within reach. However, current low coverage levels underscore the importance of expanding scale, protecting against breaks in the supply chain, and combining these with other nutrition specific and nutrition sensitive interventions.

The models represent ideal scenarios in which the remaining foods are purchased optimally and distributed within the household according to need. Real-world conditions such as price fluctuations, nutritional knowledge, food choices and sub-optimal intra-household distribution, indicate that these nutrition specific interventions must be part of a broader package of interventions.

Figure 17: Iron-folic acid supplement meets 40% of an adolescent girls nutrient requirement and reduces her cost by 15%



Finding 7: *School feeding programmes and Food-for-Training hold potential for meeting the nutritional needs of young people, but rations need to be improved*

Points to Note

⇒ **The current ration and scale of the school meal programme and Food-for-Training fall far short of meeting the needs of children and adolescents**

⇒ **Improvements to the ration through the inclusion of fresh foods, fortified flour and micronutrient supplements, can have a significant nutritional impact**

The school feeding programme in the refugee camps represents an opportunity to improve nutrition of vulnerable children through the education sector. However, the intervention currently falls short on many levels. Although the programme is well received by many beneficiaries, meals are often seen as monotonous and insufficient (UNU-MERIT, 2019).

The reach of the programme is limited and has been further negatively impacted by COVID-19 prevention measures which have largely moved education to the radio although in-person education is expected to resume in 2021. Attendance rates are higher in Kakuma than in Kalobeyei and are higher for boys than girls. Gendered barriers such as domestic duties, pregnancy, and early marriage, often prevent girls' participation (UNU-MERIT, 2019).

CotD analysis was used to identify the contribution of the current school meal to the nutritional needs of school-aged children and to model potential improvements. The current composition is shown in Table 4.

The CotD analysis found that the school ration only reduced the cost of the nutritious diet by an average of 20 percent for the children, and by 4 percent for the household overall (Figure 19). The school meal failed to provide many essential nutrients for school-aged children.

Figure 20 shows the contribution of the current ration to a hypothetical target of one third of daily recommended intake for several key nutrients. As shown, the ration falls far short on several key nutrients such as iron, vitamins A, C, and B12, and calcium. Notably, these requirements are for a child aged 6–7; the gap for an older child with higher requirements will be even greater.

Modelling found that targeted improvements to school rations significantly improved nutritional value and reduced the cost of the nutritious diet for children. Figure 21 shows the relative impacts on the cost of the child's diet of the school feeding baseline ration, and the three targeted improvements. Compared to the baseline reduction of 20 percent, the substitution of fortified maize flour for cereal grain reduced the cost by a further 6 percent. The addition to the baseline of micronutrient powder and a green leafy vegetable were more effective, reducing the child's cost on average by 46 percent and 43 percent respectively. These additions provide vital nutrients that are otherwise expensive to obtain using foods from the market.

Table 4: Baseline composition and modelled improvements to school meal

	Cereals	Pulses	Oil	Additional
Current Baseline Ration	150g	40g	5g	-
Improvement 1	-	-	-	Addition of MNP/IFA
Improvement 2	Replacement of cereal with fortified maize flour	-	-	-
Improvement 3	-	-	-	Inclusion of 1 portion of green leafy vegetable

Figure 19: The school meal reduces the cost of the child's nutritious diet by 20% and of the household nutritious diet by 4%

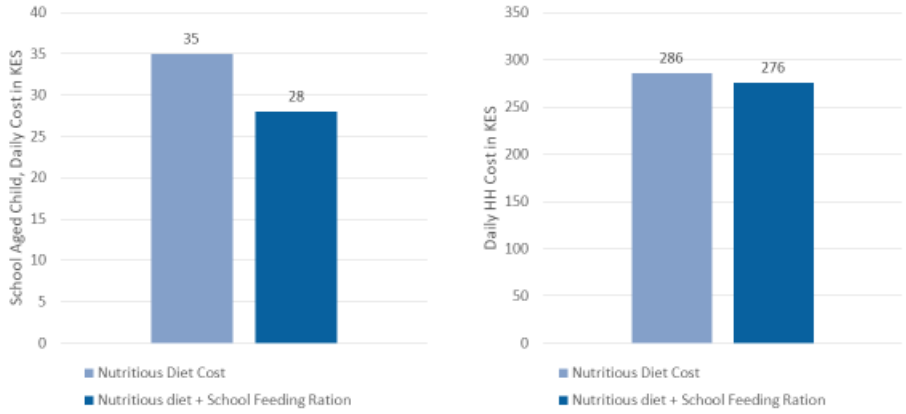


Figure 20: The school meal fails to provide many essential nutrients for a child aged 6–7 years

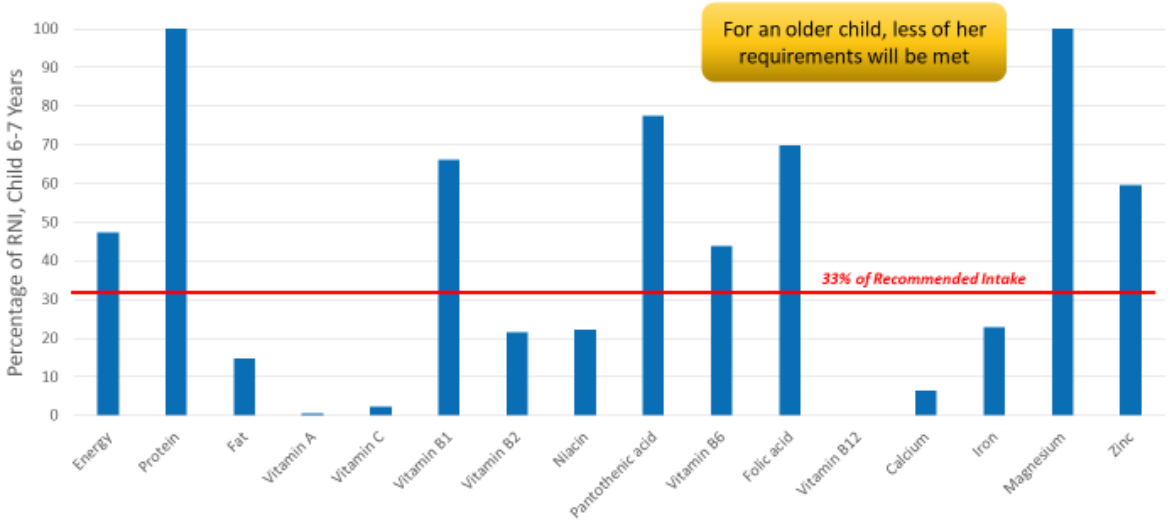
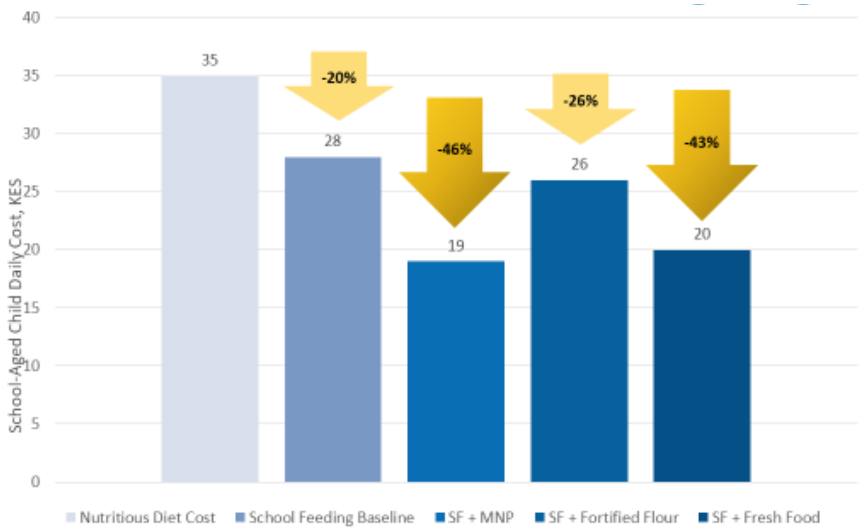


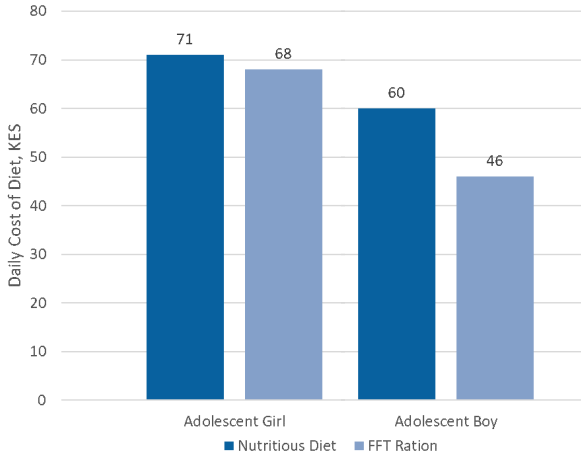
Figure 21: Improvements to the school ration significantly reduce the cost of the nutritious diet for the school-aged child, with MNP and fresh food having the greatest impact



A Food-for-Training (FFT) programme targeting adolescents has been implemented in the camps and evaluations suggest it has increased motivation and retention among participants (UNU-MERIT, 2019). However, to date coverage has been extremely low with only 600 participants, and training was only offered in Kakuma.

At the time of this study the FFT ration was the same as the baseline school feeding ration shown in Table 4. CotD analysis found that the FFT ration made a minimal contribution to the nutritious diet of adolescent girls, reducing their overall cost by only 4 percent. By contrast, it reduced the cost of a nutritious diet for adolescent boys by 23 percent (Figure 22).

Figure 22: The FFT ration has a greater impact on the cost of a nutritious diet for an adolescent boy than an adolescent girl



This difference can be explained by the fact that the ration is based on energy-dense staples and includes no fresh or animal-source foods. The ration provides nearly 30 percent of the girl's energy needs but does not provide sufficient levels of vital nutrients such as iron, vitamins A and C, and calcium (Figure 23). These nutrients must then be obtained in the market from nutrient-dense foods, which are very costly. The ration provides very low levels of vitamin C, a problem nutrient for young men in Kakuma as evidenced by the outbreak of scurvy noted previously.

Inclusion of an IFA supplement with the FFT ration would be better at meeting the needs of adolescent girls. The CotD model found that the addition of IFA to the FFT ration could reduce the cost of the adolescent girl's nutritious diet by 23 percent, compared to only 4 percent with the ration alone (Figure 24). Other improvements, such as the addition of nutrient-dense fruit, vegetables and animal-sources foods, could make the ration more nutritious. The intervention must be scaled up to reach more beneficiaries.

Figure 24: The contribution of the FFT ration to adolescent girls' nutrition could be improved with an IFA supplement

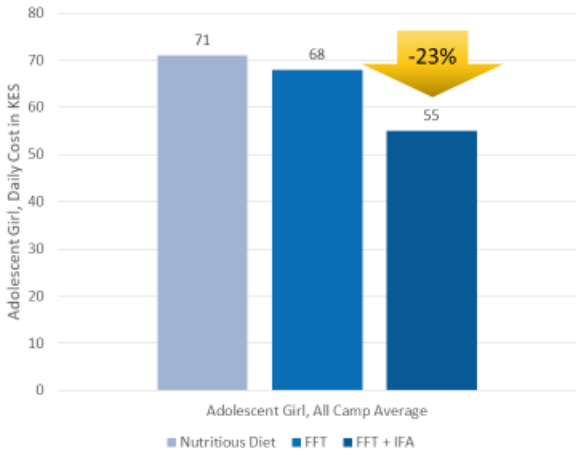
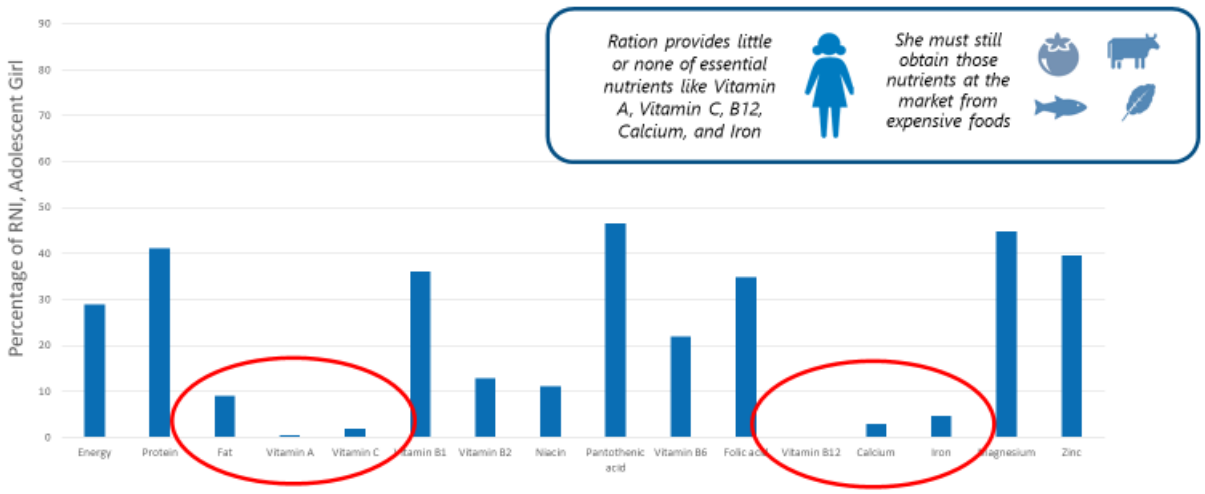


Figure 23: The FFT ration provides very low levels of certain nutrients that are essential for the adolescent girl but expensive to obtain in the marketplace



Finding 8: *Income-generating activities can sustainably increase economic access to nutrition and promote self-reliance*

Points to Note

- ⇒ **Income levels in the camps are extremely low, due in part to structural barriers**
- ⇒ **Initiatives to train and skill residents and create new income-generating opportunities offer promise to improve economic access to nutritious foods in the market**
- ⇒ **Modelling suggests that an income gap of KES 140 per HH daily should be filled through income -generating activities (IGAs)to facilitate access to nutritious diets**

The findings of this study indicate that food assistance packages are essential for supporting the nutrition of vulnerable populations. However, in most cases a sizable financial burden remains on the household to meet their remaining nutritional needs using locally available foods in the marketplace. Nutrient-dense foods such as fruit, vegetables, and animal products, are the costliest foods in local markets. It is essential to increase the purchasing power of camp residents through income generation to enable sustainable access to nutritious foods. Increased purchasing power also stimulates supply, supporting a virtuous cycle in local markets.

Current income and expenditure levels within the camp are extremely low because of a lack of earning opportunities and structural barriers that impede employment and income generation. Data from 2016 indicate that over two thirds of households had no income from any source, including employment, remittances, and reselling of the general ration. Only 3 percent of earners made more than the Kenyan minimum wage of KES 10,000/month (Guyatt et al., 2016). More recent surveys identified a low working age population and an overall employment rate of just 15 percent in the camps – lower still among female headed households (UNU-MERIT, 2019).

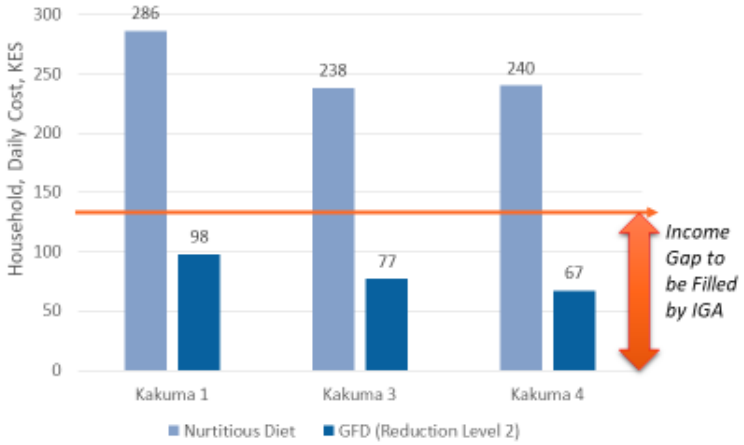
Numerous structural factors that contribute to the lack of earning opportunities include restrictions on freedom of movement and the right to work, lack of access to agricultural land and livestock, and low access to financial services for savings and credit (UNU-MERIT, 2019). While remittances, income, and financial inclusion were found to be positively correlated with food security, the COVID-19 emergency has led to the closure of small and medium enterprises and declines in the level of remittances received by camp residents (UNHCR, 2020).

Despite these challenges, there is an opportunity for WFP and partners to support new opportunities for income-generating activities IGAs in the camps. Long-term self-reliance and decreased aid dependence for the refugees is a stated goal of the government of Kenya, which expressed its commitment to these principles with the adoption of the 2016 Comprehensive Refugee Response Framework of UNHCR (UNHCR & World Bank Group, 2019). Informal entrepreneurship has flourished in the camps where an estimated 2,500 informal businesses were established at the time of a 2018 study (International Finance Corporation, 2018).

Areas that have been identified for skills development and technical training to support employment include consumer retail, hospitality, energy and fuel, telecommunications and mobile banking (Samuel Hall, 2016; International Finance Corporation, 2018). The Food and Agriculture Organization of the UN (FAO) recently supported Nutrition Sensitive Farmer Field Schools in Kalobeyei and this was found to increase income generation and expenditure by 43 percent. It also improved minimum dietary diversity for women (MDD-W) and promoted gender equality (FAO, 2020). To counteract the economic impact of the COVID-19 emergency, residents were trained in tailoring skills and produced cloth masks (UNHCR, 2020a).

Results of the CotD modelling scenarios can be used to set a target for income generation to ensure that households have sufficient earnings to purchase nutritious foods. Based on recent levels of the GFA package, households in Kakuma have unmet nutritional needs ranging in cost from KES 67 to 98 daily. To ensure access to healthy diets, income must exceed this remaining burden as households do not spend all income on food. Under the assumption that 70 percent of income is spent on food, daily household income from IGAs should achieve a minimum of KES 140 (Figure 25).

Figure 25: IGAs should provide earnings of > KES 140 daily per household to reduce barriers to nutritious diets



Finding 9:

Improvements to the supply chain and retail of nutritious foods can improve affordability of nutritious diets for households

Points to Note

- ⇒ **A functioning retail sector is essential to ensure that nutritious foods remain available and affordable for households receiving cash transfers or generating income**
- ⇒ **Initiatives to support the retail sector offer the promise of reducing the cost of nutritious foods and bringing them within reach of camp households**
- ⇒ **Models suggest that interventions to drive down the cost of targeted nutritious foods can have a significant impact on the cost of a nutritious diet to the household**

A functioning retail sector is essential to ensure that markets in Kakuma and Kalobeyei provide a stable and affordable supply of nutritious foods to residents receiving cash-based assistance or generating income through employment. As the CotD analysis has found, even when assistance is delivered in-kind a sizable portion of nutritional requirements must still be met through locally available foods.

There are numerous challenges within the food retail sector, including adverse agroecological conditions in the region, poor roads and transport infrastructure, inadequate cold storage, inefficient supply chains, and poor access to financial services. Nevertheless, there is an opportunity to address these challenges and support the private sector in improving supply chains, thus increasing both profits and customer value through improved availability and affordability of nutritious foods.

WFP and its partners have undertaken a Retail Engagement Initiative to optimize supply chain inefficiencies in the camps (WFP, 2018b). Although limited in scale, these types of approaches have great potential.

Some of the activities of the initiative included linkages between wholesalers and retailers, improved irrigation schemes, and support to link fisherfolk with local markets. At the retail level, WFP supported the establishment of common market days and enabled the use of trading sheds for improved storage for perishable food. Participants also received training on financial management, food safety, business development, and linkages for improved financial access and credit lines. Among other benefits of the programme, the improved supply side efficiencies reduced the retail price of tomatoes by 30 percent (WFP, 2018b).

CotD modelling examined the potential to improve the affordability of a nutritious diet by driving down the cost of key nutritious foods through supply chain interventions. The foods selected for the models were dried fish (Omena), sweet potato leaf and jute leaf. These foods were selected because they represent common and economical sources of nutrients that come at the highest price, including vitamins B12 and A, folate, calcium, and iron. However, they may not necessarily represent the most preferred foods of all target populations. Furthermore, to ensure that reduced prices translate into purchase and consumption of target foods, retail support initiatives should be complemented by SBCC.

Three price-reduction scenarios were modelled to simulate the impact of supply chain interventions on price of these target nutritious foods: pessimistic (5% reduction), moderate (10% reduction), and optimistic (20% reduction). The models showed an average decline in the overall household cost of a nutritious diet of 2 percent under the pessimistic scenario, 4 percent under moderate, and 9 percent under optimistic assumptions (Figure 26).

Homestead production also promises to increase the supply of nutritious foods at the household level despite challenges to its widescale adoption such as land access and irrigation. CotD modelling was used to examine the potential of homestead production of nutritious foods to improve the affordability of diets. Green leafy vegetables (kale) and chicken eggs were selected for modelling based on their nutritional value, low barriers to production, and success in other homesteading programmes. The models found that the combined production of these two nutrient-dense foods at the household level could decrease the cost of the nutritious diet for a household by 17 percent (Figure 27).

Figure 26: Targeted improvements to the supply chain of nutritious foods can reduce the overall cost of the nutritious diet

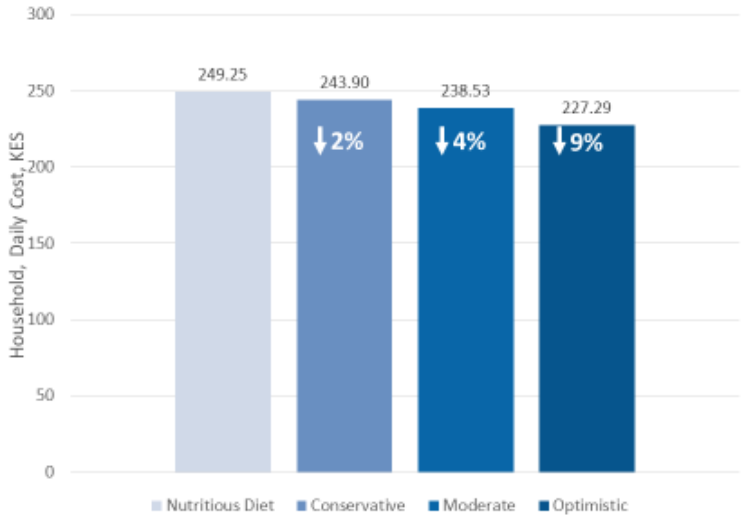
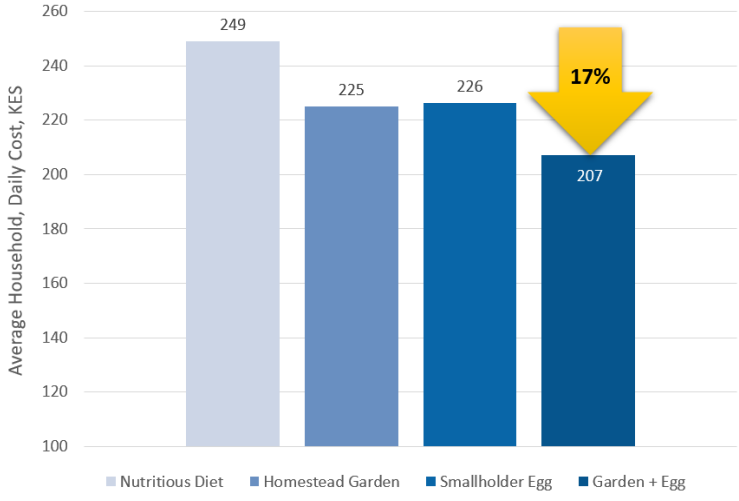


Figure 27: Homestead production of green leafy vegetables and eggs could subbstantially reduce the cost of a nutritious diet



Finding 10: *Packages of nutrition specific and nutrition sensitive interventions across sectors are necessary to fill nutrient gaps for all household members*

In the refugee camps of Kakuma and Kalobeyei, nutritious diets are out of reach for the majority of the population. Households therefore remains highly dependent on food assistance, which currently falls short of meeting nutrient needs. As incomes from employment and remittances are very low, and calorie-dense staples are often prioritized over nutrient-dense foods, household are unable to meet their needs in the marketplace.

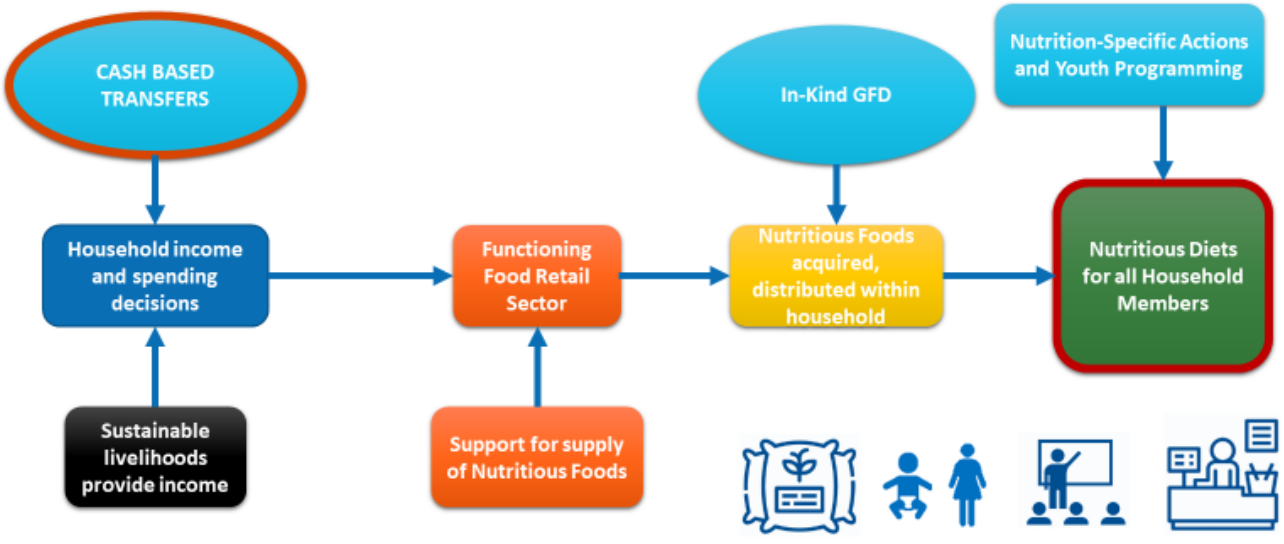
While cash-based transfers have potential to help close the nutrition gap, the success of a cash transfer depends on functioning supply chains and retail sectors for nutritious foods to reach households. Currently, the food system is characterized by low agricultural productivity, inefficient supply chains, lack of cold storage, and inconsistent supply of fresh foods, which drive up the cost of nutritious diets.

Layering nutrition sensitive and nutrition specific interventions across multiple sectors is necessary to ensure improved nutrition outcomes for all household members (Figure 28). In addition to the provision of cash transfers, new opportunities for sustainable income generation must be created in the camps. Supply and retail must be improved so that nutritious foods are more available and less expensive, and food environments should be transformed to enhance household access. Nutrition education and SBCC can influence purchasing behaviours and intra-household distribution to ensure optimal diets are procured and consumed. Finally, nutrition specific interventions and education sector programmes can reduce the cost of nutritious diets for the household and provide a vital safety net for vulnerable children, adolescent girls, and PLW.

Points to Note

⇒ **Layering of multiple interventions to transform food systems, food environments, and consumer behaviour, is necessary to ensure sustainable access to nutritious diets**

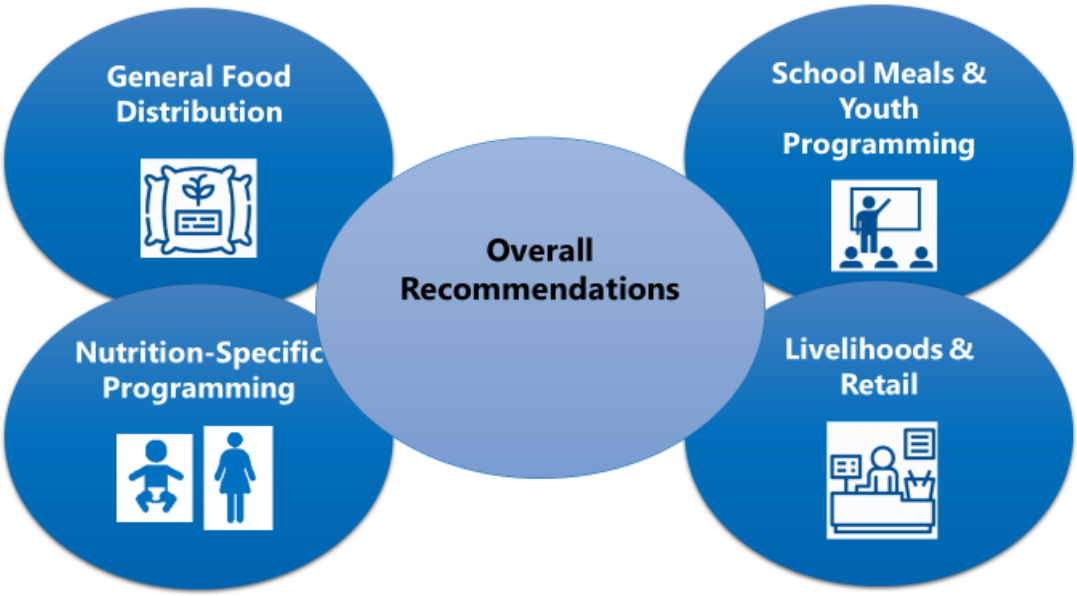
Figure 28: For CBT to translate into nutritious diets, WFP and partners must ensure adequate supporting conditions across sectors



Recommendations

Based on the findings of the FNG analysis and CotD modelling, in September and October 2020 recommendations were generated during consultations and validation sessions with the analysis team, the Kenya Country Office and the Kakuma sub-office.

Figure 29: Recommendations



OVERALL

Support functioning markets to provide a favourable food environment for healthy diets.
Strengthen multisectoral action to improve access to nutritious foods.
Support non-food needs so that non-food expenditure does not compete with food.
Prioritize nutrition education and SBCC to ensure that nutrient-dense foods are purchased and allocated within the household to the most vulnerable members.

GENERAL FOOD ASSISTANCE

Advocate for the full ration (cash modality of KES 2,500 or in-kind), which has the best potential to meet nutritional needs; reduce pipeline breaks and funding shortfalls.
Eliminate cash reductions, which undermine nutrition for vulnerable groups.
Promote SBCC to ensure increased cash value is translated to improved diets, including for women, girls and children.
Programme interventions across sectors to reduce competition with non-food needs.
Monitoring is essential: monitor food prices for main nutritious foods and monitor post-distribution. Monitoring and evaluation should include indicators such as MAD and MDD-W to track improvements.

NUTRITION SPECIFIC PROGRAMMING

While diverse diets and optimal feeding practices are the goal, supplementation remains a vital safeguard under challenging circumstances, but is not a replacement for high quality diets.
Promote optimal breastfeeding, complementary feeding practices and good infant and young child feeding (IYCF) behaviour, with communication across platforms.
Leverage a cash transfer mechanism to promote adequate infant feeding for young children.
SC+ (a protection ration) for PLW and children is essential, and should be safeguarded against breaks in the pipeline through advocacy with donors.
Monitoring is essential to assess that children are consuming diverse foods groups.
WFP's engagement with partners needs to be adapted to the context; improve caretaker education on IYCF given new understanding of the food environment and limiting nutrients.
IFA is very cost effective for women and girls with high needs and MMT could be even more effective. The country office should ensure they are accepted and promoted with partners.

SCHOOL MEALS AND YOUTH PROGRAMMING

School feeding should have an explicit nutritional objective (e.g., meeting at least 30 percent of nutrient needs). Partners should be engaged to define and target the objective.
Improve the school ration by including fresh food and MNP and by procurement of more diverse foods. Kalobeyei, where school meals are purchased locally, provides an entry point.
Include nutrition education in the school meal programme and training curriculum, explicitly and through provision of the diverse meal.
The Food-for-Training ration clearly falls short for the adolescent group; improvements to the ration and increasing the scale of the programme are essential.

LIVELIHOODS AND RETAIL SECTOR

Functioning markets are a prerequisite for cash assistance and sustainable livelihoods to contribute to improved nutrition outcomes. Market assessments, such as the Market Functionality Index (MFI) should be undertaken to better understand the market functionality and supply chain mapping of nutritious foods.
Programming should focus on supply chains and retail of specific nutritious foods to reduce inefficiencies, increase supply, decrease costs, and stimulate demand. Specific recommendations include strengthening market linkages, improving infrastructure and cold storage, provision of inputs for nutritious crops, establishment of farmer organizations, promotion of value-adding activities, and veterinary surveillance for disease-free livestock markets. Monitoring is essential to track and evaluate the impact of interventions on dietary quality and nutrition outcomes.
Engage with partners to prioritize improved livelihoods as a key to long-term sustainable improvements to the food system and local food environments.
Advocate for reduced barriers to livelihoods, employment in camps including legal frameworks, and access to financial services.
Promote homestead production, addressing context-specific challenges such as irrigation.
Consider gender in promoting IGAs; activities specifically targeting women and girls can improve women's empowerment and therefore overall household nutrition.
The COVID-19 situation is fluid and requires adaptive responses including price, expenditure, and nutritional monitoring.

Acronyms

CBT	Cash-based transfer
CSP	Country Strategic Plan
CotD	Cost of the Diet
FAO	Food and Agriculture Organization of the United Nations
FFT	Food-for-Training
FNG	Fill the Nutrient Gap Analysis
GFA	General food assistance
HH	Household
IFA	Iron-folic acid supplementation
IGA	Income-generating activity
KES	Kenyan Shilling
KISEDP	Kalobeyei Integrated Socio-Economic Development Plan
MAD	Minimum acceptable diet
MDD-W	Minimum dietary diversity for women
MEB	Minimum expenditure basket
MFB	Minimum food basket
MMT	Multimicronutrient tablet
MNP	Micronutrient powder
PLW	Pregnant and lactating women
SBCC	Social and behaviour change communication
SC+	Super Cereal Plus

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Reference

Betts, A., Geervliet, R., MacPherson, C., Omata, N., Rodgers, C., & Sterck, O. (2018). *Self-Reliance in Kalobeyei? Socio-Economic Outcomes for Refugees in North-West Kenya*. Refugee Studies Centre, University of Oxford.

Betts, A., Omata, N., Rodgers, C., Sterck, O., & Stierna, M. (2019). *The Kalobeyei Model: Towards Self-Reliance for Refugees?* Refugee Studies Centre, University of Oxford.

Betts, A., Omata, N., & Sterck, O. (2020a). Self-reliance and Social Networks: Explaining Refugees' Reluctance to Relocate from Kakuma to Kalobeyei. *Journal of Refugee Studies*, *33*(1), 62–85. https://doi.org/10.1093/jrs/fez084

Betts, A., Omata, N., & Sterck, O. (2020b). The Kalobeyei Settlement: A Self-reliance Model for Refugees? *Journal of Refugee Studies*, *33*(1), 189–223. https://doi.org/10.1093/jrs/fez063

FAO. (2020). Nutrition-sensitive Farmer Field Schools in Kenya's Kalobeyei settlement. Rome. http://www.fao.org/in-action/kore/good-practices/good-practices-details/en/c/1304380/

FAO/Government of Kenya. (2018). Kenya Food Composition Tables. Nairobi. http://www.fao.org/3/I9120EN/i9120en.pdf

Guyatt, H., Della Rosa, F., & Spencer, J. (2016). *Refugees Vulnerability Study, Kakuma, Kenya*. Kimetrica.

International Finance Corporation. (2018). *Kakuma as a Marketplace: A consumer and market study of a refugee camp and town in northwest Kenya. SPECIAL CONFERENCE EDITION*. International Finance Corporation, Washington DC.

International Rescue Committee. (2018). *MATERNAL INFANT AND YOUNG CHILD NUTRITION KNOWLEDGE ATTITUDE AND PRACTICES (KAP), INTERIM SURVEY REPORT KAKUMA REFUGEE CAMP SEPTEMBER/OCTOBER 2018*.

Kenya National Bureau of Statistics. (2018). *Basic Report: 2015/16 Kenya Integrated Household Budget Survey (KIHBS)*.

Kenya National Bureau of Statistics, Ministry of Health, National AIDS Control Council, Kenya Medical Research Institute, National Council for Population and Development, & The DHS Program, ICF International. (2015). *Kenya Demographic and Health Survey 2014* [Final Report].

Odhiambo, E. (2018). *Knowledge attitude and practice – KAP survey and a mini evaluation of the WASH project in Kakuma refugee camp and Kalobeyei Settlement site, Kenya*. Graton Agro Enterprise Consultants, Training and Advisory Services.

Opiyo, R., Mwaniki, D., & Mutua, F. (2016). *KISEDP Socio-Economic and Mapping Baseline Survey Report*. UN-Habitat.

Samuel Hall. (2016). *Comprehensive- Market- Assessment- for- Kakuma- Refugee- Camp, commissioned by DRC, AAH-I, and UNHCR Kenya.*

Sterck, O., Rodgers, C., Siu, J., Stierna, M. F., & Betts, A. (2020). Cash Transfer Models and Debt in the Kalobeyei Settlement (p. 40). Oxford: RSC.

UNHCR. (2018). *KALOBEYEI INTEGRATED SOCIO-ECONOMIC DEVELOPMENT PLAN IN TURKANA WEST (KISDEP): Phase One: 2018-2022 Comprehensive Refugee and Host Community Plan in Turkana West, Kenya*. UNHCR.

UNHCR. (2019). Fact Sheet Kenya, 01- 31 December 2019. https://reliefweb.int/report/kenya/unhcr-kenya-factsheet-01-31-december-2019

UNHCR. (2020a). Monthly Operational Update: Kakuma Camp & Kalobeyei Settlement, Kenya. May 2020. https://www.unhcr.org/ke/wp-content/uploads/sites/2/2020/07/May-2020_Monthly-Operational-Updates_Sub-Office-Kakuma-f.pdf

UNHCR. (2020b). Monthly Operational Update, Kakuma Camp & Kalobeyei Settlement, Kenya. August 2020. https://www.unhcr.org/ke/wp-content/uploads/sites/2/2020/09/Kakuma-and-Kalobeyei-August-2020_Operational-Updates.pdf

UNHCR. (2020c). Kakuma and Kalobeyei Population Statistics – As of 30th September 2020. https://data2.unhcr.org/en/documents/details/79453

UNHCR. (2020d). *STANDARDISED EXPANDED NUTRITION SURVEYS (SENS), KAKUMA Preliminary Report*.

UNHCR, & World Bank Group. (2019). *Understanding the Socioeconomic Conditions of Refugees in Kalobeyei, Kenya: Results from the 2018 Kalobeyei Socioeconomic Profiling Survey*.

UNU-MERIT. (2019). *Decentralized Evaluation: Evaluation (including a baseline and annual outcome monitoring) of Outcome 1 of WFP Kenya Country Strategic Plan, 2018 to 2023* (Baseline Report Vol 1). UNU-MERIT.

UNU-MERIT (United Nations University). (2018). *An evaluation of the effects and a cost benefit analysis of the GFD Cash Modality scale up (Cash Based Transfers for PRRO 200737) for refugees and host communities in Kenya. August 2015-November 2017. Evaluation Report*. WFP.

Vemuru, V., Oka, R., Gengo, R., & Gettler, L. (2016). *Refugee Impacts on Turkana Hosts: A Social Impact Analysis for Kakuma Town and Refugee Camp, Turkana County, Kenya*. World Bank. https://doi.org/10.1596/25863

Ververs M, Muriithi JW, Burton A, Burton JW, Lawi AO. Scurvy Outbreak Among South Sudanese Adolescents and Young Men — Kakuma Refugee Camp, Kenya, 2017–2018. MMWR Morb Mortal Wkly 2019;68:72–75.

WFP. (2018a). Kenya country strategic plan (2018–2023). Rome.

WFP. (2018b). The Kenya Retail Engagement Initiative: Getting More Value from Bamba Chakula Cash Transfers (World Food Programme Kenya INFOBRIEF No. 17) Rep

WFP. (2019). WFP Kenya Country Brief, December 2019. https://reliefweb.int/report/kenya/wfp-kenya-country-brief-december-2019

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